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Trauma-related psychological processes & psychotic-like experiences in adolescent inpatients

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Volume I

Service Evaluation Project
and
Main Research Project

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Thesis submitted in partial fulfilment of the degree of Doctorate in
Clinical Psychology

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Evaluation of Two Parenting Groups Adapted for Carers of Children with a Learning Disability

Supervised by Dr. Susanna Cole

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Trauma-related psychological processes and psychotic-like experiences in adolescent inpatients

Supervised by Drs. Suzanne Jolley, Amy Hardy & Sophie Browning

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Service Evaluation Project

Evaluation of Two Parenting Groups Adapted for Carers of Children with a Learning Disability

Supervised by Dr. Susanna Cole

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0 Abstract

This project looks at the feasibility of adapting a Webster-Stratton Incredible Years Parenting Group for parents of children with Learning Disabilities. Such groups are recommended for parents of children with Conduct Disorders, but parents of those with a Learning Disability (LD) are often excluded. Two parenting groups were facilitated in a South London CAMHS service and the second such group was further modified following feedback from the first group. Four carers completed the first group and six carers completed the second group. The carers were satisfied with the group and gave positive feedback. There was a significant improvement in the carers' level of anxiety and some improvement on levels of depression. In the second group there was a significant improvement on a parenting measure. Recommendations were made for taking the programme forward, including assessing both the carers' level of understanding of LD and its co-morbidities and assessing the children themselves. Recommendations were also made as to how the programme could further improve its accessibility. Finally it was recommended that, as the programme becomes established in this service, it is targeted towards younger children and those beginning to show challenging behaviours, in order to prevent these behaviours from becoming established.

1.0 Introduction

1.1 Background and Rationale for the project

The NICE guidelines already recommend parent-training / education programmes for children with Conduct Disorder (NICE, 2006). They state that more research is needed to examine the impact of such programmes on parents with children with Learning Disabilities (LD) and to examine parental satisfaction and preference in this area (NICE, 2006). There was also a recommendation that such programmes need to be made more sensitive to a broader range of families, particularly black and minority ethnic (BME) and socially excluded families, as these families tend to show poor attendance and concordance with services (NICE, 2006).

The Government's 'Valuing People Now Strategy' for people with LD states that they have the right to lead their lives like any other and be treated with dignity and respect. The strategy also highlights inclusion and that those with LD, and their families, are entitled to the same life chances as everyone else (DoH, 2009). This is difficult to achieve when behavioural disturbance prevents full integration into society.

1.2 Service context

This project was carried out in a South London Child and Adolescent Mental Health Service (CAMHS) that serves a population of over 360,000 people; a population that is growing faster than the national average (ONS, 2012). Approximately 27% of this population are 19 years old or younger and 44.9% of the population are from BME groups (ONS, 2012). The service has a dedicated Psychologist for children with LD and their families and there is high demand for this support. A large proportion of the LD referrals are requesting help to manage challenging behaviours that the children are showing such as aggression, self injury and toileting difficulties etc.

The parenting group for carers of children with LD is a group that has recently been introduced to this CAMHS service (who are already offering Webster-Stratton Incredible Years groups to parents with non Learning-Disabled children). Due to a combination of increasing needs and cuts to CAMHS funding (Young Minds, 2013), provision of group therapy is a way of increasing the amount of families that are able to be seen, as well as allowing families to gain peer support.

1.3 Learning Disability

1.3.1 What is a Learning Disability

LD is defined by the British Psychological Society as a significant impairment of both intellectual functioning and adaptive/social functioning, with an age of onset before adulthood (BPS, 2000). LD is sub-classified in Health Services criteria according to IQ score. 50-69 is the range of mild LD, 35-49 the range of moderate LD, 20-34 the range of severe LD and less than 20 the range of profound LD (WHO, 1993). Males show a greater prevalence of LD than females in all ranges, but the greatest discrepancy is in mild-moderate LD (Roeleveld, Zeihweis & Gabreels, 1997). There is an increase of LD through childhood, with a peak of diagnosis between the ages of 10 and 20, perhaps due to the increasing visibility of poor functioning and declining IQ (Fisch, Simensen & Schroer, 2002).

LD can be a consequence of biological factors, e.g. chromosomal and genetic disorders, teratogenic effects and maternal age, and/or social factors, e.g. low income and malnutrition (Emerson, Hatton & Llewellyn, 2006). Being given a label of LD is a powerful identity, both for the person and those in their system. It can become the primary identity and overshadow any other diagnoses (Beart, Hardy & Buchan, 2005).

1.3.2 Common Co-morbidities

Those with more severe LD often show poorer general health and may have a reduced life expectancy. There is a high level of sensory and motor impairment in the LD population and 30% of children with LD also have epilepsy (Einfeld & Emerson, 2007).

Children with LD often show co-morbid mental health difficulties, with 30-50% reaching diagnostic criteria for a mental health problem at any one time (Emerson, 2003). The most common co-morbidity is conduct disorder, followed by anxiety, hyperkinetic disorder, pervasive developmental disorders and depression. The rates of all of these disorders are higher in the LD than in the non-LD population (Emerson, 2003). It is suggested that these higher rates could be due to factors such as brain damage, sensory impairment, reduced problem solving capacity, communication problems and social disadvantage (Emerson, 2003).

1.4 Challenging Behaviour

Challenging behaviour is defined as 'culturally abnormal behaviour of such an intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy' (Emerson, 1995). It is up to four times more common in children with LD than those without and tends to be severe and persistent (Matson, Gardner, Coe & Sovner 1991). Challenging behaviour has been extensively studied in the LD population and rates of up to 14% have been reported (McClintock, Hall & Oliver, 2003). A meta-analysis showed that aggression was more likely in males, self-injury more likely in those with severe or profound LD (particularly with deficits in communication) and both aggression and self-injury more likely in those with comorbid autism (McClintock et al, 2003).

In some respects it is not so much what these behaviours look like that leads to difficulties, but the effects that they have on the family, for example shouting during bath time may be more acceptable than shouting in public and ritualised behaviours may be more easily accommodated in the home than when trying to get the child to school. However, there are some behaviours which are difficult across a variety of settings, such as biting, head-banging, eye-pushing and tantrums. Such behaviour is likely to lead not only to physical and emotional harm, but also to social exclusion of the child and their family. There will be an impact on the child and their family's quality of life, parental stress and wellbeing and a wider impact in terms of access to costly services (Emerson, 2000).

The combination of LD and challenging behaviour means that children with LD are more likely to experience difficulties at home and at school, with a particularly negative influence on the child's adaptation to the school environment and peer relationships (McIntyre, Blacher & Baker, 2006). Such disruption early on will have an impact on ongoing school adaptation as the child gets older (Rimm-Kaufman & Pianta, 2000).

There are a number of hypothesised reasons why challenging behaviours may occur. These include discomfort, due to either medical or environmental reasons, a mismatch between our expectations and the child's developmental level, the child seeking out reward, sensory stimulation, attention or escape, or the child lacking another method of communication and trying to express anger, frustration or fear etc. (Banks et al, 2007). It is also suggested that coercive or poor parenting interactions based on rigid,

punitive or inconsistent discipline will play a role in the development and maintenance of challenging behaviours (Reid, Webster-Stratton & Hammond, 2007).

The BPS Practice Guidelines for supporting those with LD state the need for early intervention in children with LD demonstrating challenging behaviours, in order to prevent this becoming a life-long problem (Banks et al, 2007). Challenging behaviour is seen to be the result of an interaction between the person with LD and their environment; the child may be expressing their unhappiness with the current environment and so clinicians need to provide interventions that address this interaction (Banks et al, 2007).

1.5 The Incredible Years Parenting Programme

Behavioural parent training has been used for a number of years to address conduct problems in children. It is based on a number of psychological principles such as social learning theory and modelling, positive and negative reinforcement and transactional models of developmental psychopathology (McIntyre, 2008). Behaviours become learnt because they have been previously rewarded or reinforced, making them more likely to be repeated in the future; a process known as operant conditioning (Skinner, 1987). Children also learn by observing the behaviour of those around them and imitating them (Bandura, 1977). Because behaviours are learned, this means that they can also be unlearned and replaced with more appropriate behaviours by modifying the environment (Lucyshyn, Dunlap & Albin, 2002).

Parenting groups are designed to equip parents with the skills to manage their children's behaviour and improve their relationships with their children. One of the best known and most researched is the Incredible Years Programme (Webster-Stratton & Reid, 2003). This programme was developed to address conduct problems and to do so at a young age before such behaviours become entrenched, having become reinforced by the family, peer and school environments. The Incredible Years Programme aims to increase parents' self-confidence and bonding with their children by promoting positive parenting behaviours such as ignoring, rewarding and communication and decreasing less positive strategies such as harsh discipline. Parents are also encouraged to work with the wider system, i.e. the whole family and school (Webster-Stratton & Reid, 2003). Methods used in the programme include modelling by the facilitators, role-play and practice for homework, with the caveat that there is no such thing as perfect parenting. The group format is both cost-effective for services and

empowering for parents by providing emotional and social support and reducing self-blame and feelings of isolation (Webster-Stratton and Reid, 2003). The efficacy of the programme has been shown in a number of randomised control trials (Reid, Webster-Stratton, & Hammond, 2007).

1.6 Adapting the group for parents of children with LD

The Incredible Years programme was adapted for parents of children with LD in a US study, with the authors asserting that behavioural problems are more prevalent in this population (McIntyre, 2008). The study followed 25 families with two to five year old children, who underwent a 12 week programme with topics including developmentally appropriate play and addressing challenging behaviour using praise, rewards and limit setting. The authors found that it was feasible to adapt the programme for children with LD and there was preliminary evidence of reducing negative behaviours and increasing parents' positive perceptions of their children (McIntyre, 2008). However, it was suggested that more research in this area was necessary, particularly as children with more severe disabilities were excluded from the study.

The family environment is the main arena in which the child socialises and develops both adaptive and maladaptive strategies for survival. Family processes have been implicated in the development of challenging behaviours in children with and without LD, with coercive parenting practices of particular importance (McIntyre, 2008). It has been suggested that both parenting stress and challenging behaviour in the child exert a bi-directional influence on each other in families with children with LD (Baker et al, 2003). Mothers of children with LD have also been found to show higher levels of stress and depression (Blacher & McIntyre, 2006). Some of the mothers in the LD group showed a reduction in depression scores but, unfortunately, more of the mothers showed an increase in depression scores and it was unclear if additional interventions targeting well-being would be necessary for this group (McIntyre, 2008).

Although parenting groups have a growing evidence base, they have been criticised for still leaving the needs of many families with children with LD unmet (Feldman, Akinsin, Foti-Gervais & Condillac, 2004). Many families may be excluded due to restrictive inclusion criteria and the cost of providing the programmes (Howlin and Moore, 1997) and may be disadvantaged by being placed on long waiting lists or if the groups are hard to access (Anderson, Birkin, Seymour & Moore, 2006).

1. 7 Aims & Objectives

The purpose of this project is to evaluate the feasibility and usefulness of a parenting programme adapted for carers of children with LD. The project aims to explain how this group was delivered and if it was beneficial for this group of carers in terms of both managing the behaviours of their children and for their own emotional well-being.

The group teaches carers strategies to understand and manage their children's behaviour. It is hypothesised that this will improve the relationship, communication and positive interactions between the carer and the child, reduce challenging behaviour, reduce parental stress levels and perhaps the need for input from Services. It is also hypothesised that the group will allow carers to share their experiences/expertise with other carers and gain peer support. The group is expected to be cost-effective for Services.

2.0 Method

2.1 Participants

16 carers took part in two parenting groups, one which ran during the autumn school term and the other during the spring school term. The only inclusion criteria for the group were that there was a child in the family with a diagnosed LD and that the carers spoke enough English to be able to understand and take part in discussions. The group was open to carers of children with mild, moderate or severe LD. However, in practice, the majority of those children referred to the group had a moderate or severe LD. The majority of those invited to the group were families that had been referred to CAMHS for support with managing challenging behaviour. Local special schools were informed that the group was going to run and also referred families that they felt may be appropriate.

Many of the children in the group had co-morbid diagnoses of Autism Spectrum Disorders (ASD) and Attention Deficit Hyperactivity Disorder (ADHD). They were all displaying challenging behaviours in the home and some were also displaying challenging behaviours in other environments, such as school and church. These behaviours were impacting on their families in terms of limiting where they were able to go outside of the home, the amount of time carers were able to spend with the rest of their family and the quality of the family relationships. There were significant levels of self-injurious behaviours and violence towards family members and property. Carers reported that they were under a great deal of stress that they felt unable to share with their friends who had non-disabled children. They were also worried about the future impact of looking after their children, both in terms of their children getting physically stronger and more difficult to manage and in terms of who would look after their children when parents became older and died.

2.2 Facilitators

Both groups were facilitated by the same three healthcare professionals. The lead facilitator was a CAMHS practitioner with experience and training in running the Incredible Years programme with non-LD children. The group was co-facilitated by a specialist LD nurse and a Trainee Clinical Psychologist.

2.3 The Parenting Group

The group was modelled on the principles of the Webster-Stratton Incredible Years programme, but adapted to be appropriate to the needs of carers with a child with LD. For example, there was a lot of psycho-education in the Registration / First Session about what LDs are and how they may interact with any comorbid issues, such as ASD and ADHD. This was to allow the carers to gain understanding of what the realistic expectations of these children and their learning capabilities are. There was also discussion about making techniques appropriate to children with no, or limited, language. Finally, the group was made specific to children with LD so that carers, who may feel isolated from carers of non-LD children, could talk about their experiences, gain peer support and learn techniques that were appropriate to their child. These techniques were taught in line with the ongoing discussions about appropriate expectations for these children, for example not using sticker charts, but using rewards in a more practical and meaningful way e.g. immediate sensory stimulation.

2.3.1 Group 1

For group 1, the registration session was held in the CAMHS building and allowed the carers to meet the facilitators, hear more about what the group would involve and have any questions answered. Carers were also administered the measures described below.

The group was delivered over nine weeks in the meeting room of a local special school, which could be easily accessed by public transport or car. Each week followed the same format of recapping the topic of the previous week, asking carers to feedback on how they had found practicing the topic at home and then discussing the topic for that week.

Week 1 covered both goal-setting for the group and ABC charts. Carers were invited to tell the group a little about their child and some of the difficulties they were experiencing. They were then asked to identify three goals that they would like to work on whilst in the group. They were encouraged to choose goals that related to their child's behaviour, to make them specific and measurable and to rate where they were currently in terms of achieving these goals. Carers were also given psycho-education about how behaviours have both antecedents and consequences. Examples were discussed, as were the functions of behaviours in terms of the child reducing unwanted antecedents and increasing desired consequences. Carers were given specific instructions about how to fill in the ABC charts, with examples given, and asked to complete them for specific unwanted behaviours in their child. This was in order to

increase carers' understanding of why their children were displaying challenging behaviours.

In week 2, parents were invited to feed back on filling in the ABC charts and if they had noticed any particular patterns in their children's behaviour. The topic of the week was special time. In the Incredible Years programme, this is specifically about parents playing with children and the carers in this group did think about enjoyable, developmentally appropriate play that they could engage in with their children. However, some parents reported that their children did not appear to enjoy playing with others, particularly those children with co-morbid ASD. Those children with co-morbid ADHD found it difficult to maintain their attention on a task and so would struggle with a set amount of play time. Carers were encouraged to start with what felt like a manageable amount of special time for them and their child and to consolidate doing this on a daily basis, then increase it gradually. They were also encouraged to develop their own concept of what special time could be with their child, for example having dedicated time to spend in the same room as the child while they engaged in a task, or adding fun things to routine activities, such as singing songs while walking to school.

In week 3, parents discussed and problem-solved any issues they had had with introducing special time. The topic of the week was praise and rewards, which were condensed into one session. The group discussed what praise is and why it is important. Information was given about making praise immediate and using tone of voice and gestures to make the praise obvious to the child. Carers thought about why it is particularly important for praise to be immediate for children with LD. The Incredible Years Programme advocates the use of reward charts for children and helping children to work towards achieving a larger goal. However, carers in this group were encouraged to give immediate verbal praise and/or hugs and small immediate rewards, which were often based on sensory stimulation rather than the child obtaining a new object. Carers were encouraged to be consistent with the praise given and to use no cost or low cost rewards in order to assist with this.

Week 4 introduced the topic of routines, something that is particularly important for children with LD and co-morbid difficulties, who may experience the world as a confusing and inconsistent place. Carers were encouraged to think about what routines their child needed to adhere to and why routine is important for all of us. There was a

discussion about strategies that could be used to facilitate routines, such as visual timetables and marking transition points from one routine to another, such as the use of a comfort object and giving warnings for change where applicable.

In week 5, the topic discussed was commands. The discussion centred around how most children are given 17 commands every half-hour, but that this increases to 40 commands for those children demonstrating challenging behaviours. Parents were encouraged to reflect on how many commands they gave to their own children and how these commands were delivered. They were asked about what would constitute effective commands and were given instructions about keeping commands short, clear and specific and only giving one command at a time. This is necessary for all children, but particularly so for children with limited verbal abilities. They were also encouraged to follow through with the commands given and to use praise, rewards and consequences to support this.

This led into the topic of week 6, which was consequences. The barriers to, and benefits of, consequences were discussed and the idea of natural and logical consequences was introduced. Carers were encouraged to think about making consequences appropriate to the child's developmental age and not unnecessarily punitive. As with commands, carers were informed of the importance of consequences also being immediate and followed through with. There was a focus on rewards and consequences that will be meaningful to a child with LD.

In week 7, parents fed back on their ongoing experiences of implementing the topics discussed. The topic of the week was ignoring, what it is used for and when it is helpful. Due to the severity of some of the behaviours displayed by the children, parents discussed which behaviours can be ignored and which cannot and how to implement ignoring.

Week 8 introduced the topic of time-out and when this would be an appropriate method to use. All of these topics were presented in a way that is appropriate for children with LD, for example there was a lot of consideration of the safety issues of ignoring and time-out.

In the final week, carers again completed the measures and were invited to discuss any remaining issues and reflect on their experience of completing the programme.

2.3.2 Group 2

This group ran in the same format as group 1, other than the registration session. In group 2, the registration session was extended to two hours and was held at the same location as the rest of the sessions, so that carers were already making a commitment to attending the group. This session was used for carers to complete the measures, to introduce the group and to allow more time for discussion around carers' holding realistic expectations of the group. The process of carers introducing their children and setting goals was begun in this session and continued in week 1. This allowed more time in week 1 to discuss the functions of behaviours and completing ABC charts.

In group 2, the weekly discussion notes were written up by the facilitators and given to the parents the following week, so that they had a written copy to keep. The notes were also sent to any of the parents who were unable to attend a session so that they could catch up before the next session.

2.4 Assessment Measures

Pre- and post-group measures in group 1 were the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), the Arnold and O'Leary Parenting Scale (PS; Arnold et al, 1993) and the Hospital Anxiety and Depression Scale (HADS; Zigmund and Snaith, 1983).

The SDQ is a brief behavioural screening questionnaire about 3-16 year olds. It exists in several versions and the version used here was for parents to complete about their children. The SDQ asks about 25 attributes, some positive and others negative, and the items are divided between five scales: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behaviour. The SDQ also has an impact supplement that asks about chronicity, distress, social impairment and burden to others, which can provide useful information about psychiatric caseness and use of services (Goodman, 1999).

For group 2, the SDQ was removed from the battery of measures, as it did not appear to be sensitive to the changes that were being seen in the carers. These changes were more related to their parenting and coping styles than initially demonstrated in the children's behaviour.

The PS is a 30-item self-report scale that was developed to satisfy the need for a cost effective measure of actual parental discipline practices. Rather than asking about

parental beliefs and attitudes regarding discipline, the parenting scale asks about the probability with which the parent actually uses particular discipline strategies.

The HADS is a 14-item scale with seven of the items relating to anxiety and seven relating to depression. It was created specifically to avoid reliance on aspects of these conditions that are also common somatic symptoms of illness, for example fatigue and insomnia or hypersomnia. It is a simple yet reliable tool that is valid, not only in hospital settings, but also in community settings and primary care.

During both groups, carers completed a week by week evaluation questionnaire, asking about their satisfaction with the content of the group and the way it was facilitated.

3.0 Results

In group 1, nine carers attended the first session. Eight of these carers were mothers and the ninth was the grandmother of one of the mother's children. The grandmother chose not to complete the questionnaires as her daughter was completing them for their child. She also did not complete the course, as their family were able to discuss the learning points within the family without both carers needing to attend. Four other carers also did not complete the course; one carer did not have childcare available at that time, one carer did not feel she needed the support at the current time, one carer was no longer contactable and the other carer did not give a reason.

In group 2, eight carers attended the first session. Six of these carers were mothers and two were fathers (none were from the same family). Two of the carers did not complete the course and did not give reasons for this. Two other carers were not able to attend the final week and so did not complete the end of group measures.

The ages of the carers was not routinely collected. In both groups they came from a range of ethnic backgrounds, including White British, Black British, Black African, Other Asian and Other. The children ranged in age from six to fourteen and had a moderate or severe LD. The majority also had a diagnosis of ASD and/or ADHD and many of the children also had physical disabilities.

3.1 Strengths and Difficulties Questionnaire

This was only completed by the carers in Group 1. Higher scores on the SDQ indicate greater levels of difficulty in the child (other than the prosocial scale). The pre-group and end of group scores are shown in Table 1.

Table 1

Strengths and Difficulties Questionnaire Scores

Subscale	Pre-group Mean (SD)	End of group mean (SD)	T score	df	p
Overall Stress	16.25 (11.33)	20.75 (5.12)	-.85	3	NS
Emotional Distress	1.33 (1.50)	1.33 (2.30)	.00	2	NS
Behavioural Difficulties	5.67 (1.53)	5.33 (2.89)	.38	2	NS
Hyperarousal	9.33 (1.16)	9.00 (1.73)	1.00	2	NS
Difficulties with other children	5.75 (1.26)	5.75 (0.96)	.00	3	NS
Prosocial Behaviour	3.25 (4.57)	3.00 (4.00)	.52	3	NS
Impact	4.33 (1.53)	5.67 (4.51)	-.76	2	NS

A paired-samples t-test was conducted to evaluate the impact of the group on carers' scores on the SDQ. There was no statistically significant change on any of the subscales.

3.2 Carer satisfaction

The three statements on the weekly evaluation questionnaires each had four possible responses and were scored 0-3, so the range of total scores was 0-9, with higher scores representing greater levels of satisfaction with the group. The scores for both groups are shown in Table 2 (these questionnaires were not administered in week 9).

Table 2

Carer Satisfaction Scores

Group	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
1	Did not attend	4	4	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend
1	7	5	Did not attend	9	5	3	9	8
1	6	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend
1	8	9	7	Did not attend	8	9	6	6
1	6	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend
1	6	6	6	6	6	6	6	6
1	5	6	6	6	6	Did not attend	6	6
1	8	8	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend
2	Not administered	7	5	Did not attend	8	Did not attend	7	7
2		9	6	7	Did not attend	5	5	8
2		9	8	7	Did not attend	8	9	9
2		6	7	9	8	7	7	7
2		9	8	9	9	9	Did not attend	7
2		9	9	9	9	9	Did not attend	9
2		Did not attend	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend
2		6	6	Did not attend	Did not attend	Did not attend	Did not attend	Did not attend

The mean score the carers in Group 1 gave was 6.4 and the median score was 6. The mean score the carers in Group 2 gave was 7.7 and the median score was 9.

3.3 Parenting measure

On the PS, ratings are made on 7-point scales that are anchored by one effective and one ineffective discipline strategy. After reverse coding of some of the items, a score of 1 indicates effective discipline and 7 indicates ineffective discipline. Therefore, a reduction in scores shows an increase of effective disciplinary procedures. The scores for each group separately and the groups combined are shown in Table 3.

Table 3

Parenting Measure Scores

Group	Pre-group mean (SD)	End of group mean (SD)	T score	df	p
1	75.60 (27.22)	82.90 (17.68)	-0.84	2	NS
2	101.75 (11.62)	74.85 (20.31)	4.16	3	<0.05
Both groups	90.54 (22.57)	78.3 (18.13)	1.46	6	NS

A paired-samples t-test was conducted to evaluate the impact of the group on carers' scores on the PS. There was no statistically significant change for Group 1 or for the groups combined. However, there was a statistically significant decrease in scores for the carers in Group 2 ($t(3)=4.16$, $p<0.05$).

3.4 Carer mood questionnaires

On the HADS, each item is scored from 0-3 and an individual can score between 0 and 21 for anxiety and/or depression. A cut-off of 8/21 or above on each scale is used to identify a case (Bjelland et al, 2002). The scores for both groups for depression are shown in Table 4 and for anxiety are shown in Table 5.

Table 4

Carer Mood Questionnaire Depression Scores

Group	Pre-group Mean (SD)	End of group mean (SD)	T score	df	p
1	11.75 (5.12)	9.00 (2.45)	1.46	3	>0.05
2	8.00 (2.71)	7.25 (3.60)	1.19	3	>0.05
Both groups	9.88 (4.29)	8.13 (3.00)	1.76	7	>0.05

A paired-samples t-test was conducted to evaluate the impact of the group on carers' depression scores on the HADS. There was no statistically significant change for either of the groups separately or for the groups combined. However, the scores for Group 2 did drop below caseness.

Table 5

Carer Mood Questionnaire Anxiety Scores

Group	Pre-group Mean (SD)	End of group mean (SD)	T score	df	p
1	12.25 (3.30)	7.5 (1.29)	4.29	3	<0.05
2	11.25 (5.85)	7.25 (4.5)	2.72	3	>0.05
Both groups	11.75 (4.43)	7.38 (3.07)	5.06	7	<0.005

A paired-samples t-test was conducted to evaluate the impact of the group on carers' anxiety scores on the HADS. There was no statistically significant change for Group 2, although the scores did drop below caseness. However, there was a statistically significant decrease in carers' anxiety in Group 1 ($t(7)=5.06$, $p<0.005$) and when the groups were combined ($t(3)=4.29$, $p<0.05$).

3.5 Facilitator and Carer feedback

Facilitators met at the end of each session and of each group to give feedback on how they had found the sessions and running the group overall. This feedback can be found in Appendix A and covers both issues in running the current group and ideas for running future groups, as well as reflections on working with these carers and this population.

Carers were invited to give feedback at the end of each session and when they completed the group. This feedback can be found in Appendix B. Carers gave positive feedback about the group, stating that they found the topics useful, that it was a safe space to show emotions and that they enjoyed attending. They also felt that there was enough time in the group discussion to discuss their individual children.

4.0 Discussion

4.1 Feasibility of adapting and running the group

This study showed that it is possible to adapt and run the WS parenting programme for carers of children with LD. The main components of the group were maintained, but the language used, and the way that the skills were taught and practised, was made more appropriate for the level of understanding of these children. This allowed the carers to learn and develop more effective parenting strategies to manage challenging behaviours that were impacting on the whole family's quality of life.

As the lead facilitator of the group had experience and training in running WS parenting groups for carers of non-LD children, he was able to reflect on the differences with this group. Although the application of the skills training was different, the topics felt applicable to the carers in the group and were reported to have been useful. Adapting the group so that it was more sensitive to issues of language and understanding allowed the carers to become more empowered in effectively parenting their children.

As the children in these two groups were older than the inclusion criteria for standard WS parenting programmes, the carers had experienced a number of years of difficulties in managing their children's behaviours. This meant that many of them were understandably sceptical about what benefit attending a parenting group could have for them. Whereas parenting programmes for non-LD children may lead to large changes in the behaviour of some children, these groups emphasised the importance of very small changes. This meant that the carers were able to use small successes as motivation to continue with implementing the strategies learnt so that these changes were more likely to be maintained over time. There was a lot of reassurance about carers not expecting miracles and allowing them to recognise what they had achieved. The importance of homework between sessions was consistently emphasised, as was trying out the techniques right from the first session. This again allowed the carers to experience small successes and develop the motivation to continue with what was, initially, a difficult process.

This study extends previous research into the efficacy of parenting programmes for children with LD by including carers of children with a severe LD and showing that it is possible for the programme to still have an effect in this population.

4.2 Modifications to Group 2

The way that the group was developed and facilitated in the CAMHS service allowed it to be responsive to the needs of the population being served. The facilitators were mindful of what had worked well in the first group and what could be improved and used their reflections to further modify the second group.

One of the main issues from the first group was that the registration session had not been utilised sufficiently. It had been used more as a 'drop-in' session for carers to complete the measures and find out more about the group. It had not allowed time for the carers to begin to bond as a group, to talk about the difficulties they were experiencing, to think about what would constitute realistic goals for their children and to fully understand the concept of the 'ABC' chain, functional analysis.

In the second group, carers were given more information about the practicalities of the group before it started and were asked to think about if they could commit to the group before attending the registration session. The group was held in the same location, and at the same time, as the rest of the group would be. This allowed the group to already be developing a sense of cohesion. Group cohesion is important, as it means that group members are more likely to stay with the group and to participate readily in the group tasks (Carron and Brawley, 2000). Amending the structure of the group in this way meant that the second group had fewer drop-outs and that there was more of an opportunity to balance the carers' need to express how difficult things were with having enough time to learn the skills involved.

4.3 Efficacy of the group: Questionnaires

Use of the SDQ in group one did not show any significant changes. It was not clear that this was a valid measure for this population as it did not take into account difficulties that were a consequence of the LD and that may always be present in the child. It felt that it was more appropriate to measure how carers were managing these difficulties and the impact it was having on the family. It is possible that this measure was affected by the fact that behaviours can get worse before they get better, as the child tests out the new boundaries that have been put in place by the carer, a phenomenon known as the 'extinction burst' (Miltenberger, 2012). It is also possible that this measure was not sensitive and specific enough to pick up on the small changes that were happening in the group, which may have not become statistically different until a later point in time.

Because of this, and not wanting to over-burden carers with the amount of measures that they needed to complete, the SDQ was not used in group 2.

In order to measure the effect that the group was having on carers' parenting strategies, the Parenting Scale (PS) was used. There was no significant change in group one, but a significant improvement in the use of effective disciplinary strategies in group two. It may be that this reflected the extra time allowed at the beginning of the group, as outlined above, which meant that subsequent weeks had sufficient time for parents to gain an understanding of the weekly topics.

Carer's self-reported levels of depression fell in both groups, but this was not a significant change. Carers reported higher levels of anxiety than depression in both groups. Their self-reported levels of anxiety fell in both groups. In group two this reduction was not significant, although the mean group score dropped from caseness to non-caseness. In group one the reduction was significant.

As the group did not specifically address carers' levels of depression and anxiety, or ways of managing this, these results are very positive and suggest that running this group has a beneficial effect, not only on the use of effective parenting strategies, but also on carers' wellbeing.

4.4 Efficacy of the group: carers' feedback

Carers reported that they were satisfied with both groups. There were higher levels of satisfaction in group two and this may have reflected the further adaptations that were made to this group, as outlined above.

Carers remarked that the group was a space to discuss things that they may not have a chance to do so elsewhere and to be honest about how difficult things were. Having this space and being able to express their reservations about being able to carry out the strategies appeared to allow them to then engage with what was being taught. Carers reported appreciating the group and the chance to speak freely without being judged, as they didn't want to speak to people who will feel sorry for them or who don't understand.

It was interesting to note that some of the carers actually looked different by the end of the group, with more open, relaxed body language and looking brighter and less tired. It was also noted that some carers were responding to information and techniques that they hadn't responded to in individual sessions with the CAMHS team.

4.4 Impact on exclusion v inclusion

These groups were specifically targeted towards children with LD. This is in contrast to the programmes provided by mainstream services which often have LD as an exclusion criterion. As previously outlined, the NICE guidelines recommend that parenting programmes are made more sensitive to a broader range of families, particularly those from BME groups (NICE, 2006). Although these two groups comprise small numbers, they were attended by carers from a range of ethnic backgrounds.

There were six drop-outs from the two groups combined and for one carer this was because the CAMHS service was unable to provide childcare while the group was running. This is an issue that would need to be addressed in future groups in order to further improve accessibility. For the carers who did not feel that they needed the support of the group at that time, accessibility and inclusion were not issues that needed to be addressed. For the carers who did not give a reason for dropping out of the group, it is not known if there were issues of accessibility and inclusion that made them drop out. It would be helpful if future groups were able to follow up with carers who drop out of the group, even if they are not families who are under the care of the CAMHS service.

As all of the carers had children with LD who were displaying challenging behaviour, this allowed them to talk openly about the difficulties they were experiencing. This was not something that they always felt able to do with their friends and extended family. Sharing these experiences allowed the group to address issues of stigma that can make families such as these feel excluded from 'normal' social activities.

One carer who expressed an interest in attending the first group, but said that she was unable to attend due to childcare issues also reported that she had limited literacy. It is not clear if this was also a factor in her choosing not to attend the group and ensuring the group is also accessible to carers with low levels of literacy would also address issues of exclusion.

4.5 Addressing the NICE recommendations

The NICE guidance on parenting programmes (NICE, 2006) recommends that more research is carried out to examine the impact of such programmes on parents of children with LD. This study provides further evidence that such a programme can be run for this population and does have a positive impact on the parents involved. The carers in this study did report satisfaction with the programme and a preference for

having their own adapted group, where they could also gain peer support. These two groups did not achieve 100% attendance, but those carers who completed the group did show concordance with the group and the way that it was run. The groups addressed some of the issues of accessibility that face families with children with LD and was relevant to the family life cycle issues and disrupted transitions that these families face.

4.6 Are additional interventions for carers needed?

As described in the introduction, carers of children with LD and challenging behaviours often demonstrate high levels of emotional distress. As such, it was unclear if additional support would need to be in place for carers to benefit from this group. One of the carer's feedback from an early session requested a session on looking after themselves and reducing stress levels, as they felt that they could cope better when they are more relaxed. As described above, carers' overall levels of emotional distress did reduce by the end of the group. However, there may be some carers who remain distressed at the end of the group and would benefit from some individualised support. It is often difficult for CAMHS services to provide individual support for adult carers due to limited resources and long waiting lists and so it may be helpful for CAMHS to develop links with adult services or with carer organisations in order to be able to signpost carers who need extra support.

It is important to remember anxiety and depression are not the only ways that emotional distress could manifest in these carers and that there is often a sense of bereavement and loss. Service pressures do not always allow the time or space for this to be addressed with carers and it may be that the shared experiences of the group are able to facilitate some of this work. However, it may also be necessary for the group to be flexible enough to allow extra time for this to be discussed or for some of the carers to be able to access individual support outside of the group.

For many of the carers who attended these groups, this was either their first contact with CAMHS or they had been referred by the child's school. It became apparent that not all of the carers had knowledge of what LD is, what effect it would have on their child and what realistic aspirations for their child would be. Often carers also lacked knowledge and information about their child's co-morbid diagnoses. The CAMHS service provides psychoeducation groups on ASD and ADHD and psychoeducation packs about LD. It may benefit future groups if carers are required to have had this

information before attending the parenting programme. This would ensure that all carers begin the group with a similar level of knowledge and that the sessions can be devoted to learning and practicing the parenting techniques. Alternatively, a psychoeducation session could be timetabled in between the registration and the first session. This would allow carers to begin the group more quickly and save on the resources of allocating spaces in the full group. The session could be audited to see if it gives carers greater understanding of their children's needs.

4.7 Facilitators' experience of the group

The facilitators noticed that one of the things the carers appeared to find the most useful was the chance to be open about how much of an effect caring for their child was having on them and their family. It appeared especially important that they were able to do so with their peers. Carers were, in general, very respectful and validating of each other.

At times there was frustration directed against the programme itself, with carers wanting their child to 'get better' or to be somehow 'fixed' by services. It felt as though this was perhaps linked to their fear of what the future may bring. There was a lot of anxiety about what would happen if parents could no longer manage, or when they died, and carers at times reacted to the examples brought by others by thinking about what the worst case scenario would be for their child in that situation.

Carers reported a lot of tiredness and exhaustion, particularly when their child had difficulties sleeping. Coupled with their loss of a 'normal' child, these carers have had to parent at a high level for so long that this was also exhausting. It was therefore understandable that they were desperate for someone to wave a magic wand or take over for them. It was necessary to be quite explicit with the carers about the need for them to learn to set boundaries at the present time and prevent further difficulties as their children get bigger and stronger. It also appeared important to have had the time to assess the families before the group started, as it was difficult to ask carers to set boundaries with their children if they were not boundaried themselves.

In both groups there was some tension between those carers with verbal and those with non-verbal children and it was necessary for facilitators to validate the struggle that carers are experiencing, without re-inforcing this divide. It was also important for facilitators to be aware of cultural issues that may affect carer's expectations of their children, for example whether or not their male children would normally be expected

to clean up after themselves. The different stances taken by the group encouraged discussion amongst the carers and the facilitators thought about where to position themselves physically in the circle in order to encourage discussion versus debate. The other thing that facilitators needed to know was the role of the carer's spouse and if there were wider family resources available, as this had an effect of carers' willingness to try new things.

Each group had one carer who was struggling and very vocal and one carer who was managing to use some of the strategies and could provide hope and peer support. Either one could set the tone of the group and it was up to the facilitators to manage this dynamic.

The facilitators found the group promising, very relevant and much appreciated. Carers became noticeably more confident and began to develop a 'self-as-expert' role, for example reporting, 'I'm the one coming to the group, I'm the one who knows what to do'.

4.8 Recommendations for future groups

Some of the recommendations for future groups have been discussed above, but the main outstanding recommendation would be for families to have been assessed before the group. This is both to ensure that they are ready for the group in terms of their understanding of LD, co-morbidities and a willingness to try out the strategies taught in the group and also to give the facilitators an opportunity to meet the children and gain an understanding of their strengths and difficulties. It may not be realistic to imagine that services would have the resources to provide more sessions and so an assessment may allow extra targeted support to be directed towards those families that need it. It may also be possible to extend the idea of the session notes that were used in Group 2 by providing crib sheets regarding LD and associated difficulties to already be introducing carers to the nature of the group.

Once the parenting programme is running regularly, it would be beneficial to try and target the parents of younger children in line with the Webster-Stratton parenting programme. There is a critical period for optimal learning pre age four to prevent or lessen the risk factors for challenging behaviours so that behaviours become less entrenched (Kaiser and Hester, 1997). It would be helpful to assess whether running groups for targeted populations (e.g. those children at the beginning of the pathway towards challenging behaviours or those who have just received a diagnosis of LD or

co-morbid difficulties) has any impact on preventing challenging behaviours from becoming entrenched.

In order to broaden the group's accessibility for carers, it may be beneficial to run intensive groups, evening groups or alternate the days of the week on which the group is run. It may also be beneficial to consider whether providing childcare may be cost-effective if it means that carers who attend the group need less support from the service.

4.8.1 Limitations of the study

The main limitation of this study was its small sample size, composed of a self-selecting group of parents who were participating voluntarily. These carers were motivated to attend the group and to find a benefit from it. Within this small sample, two carers from Group 2 did not attend the final session and so their outcome measures are missing. The study is also limited by the outcome measures available not always being appropriate for this population. It may be more appropriate to use measures that have specifically been developed for the LD population, rather than using the standard CAMHS measures. Recently developed scales include the modified The Child's Challenging Behaviour Scale (Bourke-Taylor et al, 2013). It may also be useful to ask the carers to rate the frequency of particular challenging behaviours at the start and end of the group and to feedback specifically on what has been meaningful for them in terms of change. This information could be used to develop a new measure.

Although the location of the group was easily accessible for carers, it was also the school that some of the children were attending. There were occasions when carers were expected by the school to assist with their child when they were distressed and this took them away from the group.

4.9 Conclusions

Although these were two groups containing a small number of carers, they did appear to improve relationships and positive interactions between carers and their children. Carers reported improved communication, even with their non-verbal children and that they were able to manage challenging behaviours more effectively. There was some impact on parental stress and the group allowed experiences to be shared and peer support to be gained.

It was cost-effective for the service for carers to be seen as a group and the group was relevant to families involved with this service. Recommendations have been made for how the group could be developed further, for both the benefit of carers of children with LD and a CAMHS service with finite resources.

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Appendix A: Facilitator Reflections

Group 1 Reflections

Week 1:

- The group needed time to speak about the effect this is having on them – possibly the first time they have had a chance to do so? And with other parents?
- The group seemed to bond well and chatted to each other in the break and on the way out. Very respectful and validating of each other.
- Difficult to keep to time as identifying goals took a long time and there was lots to share there with the rest of the group.
- Some of the parents found it difficult to understand the concept of the ABC chart e.g. already sure that there is no trigger to a behaviour, already wanting to know how to change the behaviour and not seeing the point of the exercise (e.g. the child is non-verbal, they have tried everything, are fed up and just want some answers).
- Issues around childcare when the group is on.

Week 2:

- Only 1 parent had done the homework – others didn't want to / were already sure they know the trigger or that there isn't one / want answers as to how to manage the behaviour. However, they did seem to grasp this more as the homework was discussed. Maybe need more time to go through examples?
- Looking for solutions
- Wanting their child to 'get better'.
- Parents limited knowledge, understanding and expectation v what we know (i.e. children and adolescents with developmental disabilities are at greater risk of developing behavioural problems than their non-disabled peers, their frequency and intensity increasing with the severity of these conditions. So often 1 behaviour is 'cured' only for another to emerge, it is often relentless.)
- Coupled with their loss of a 'normal' child, I also think these parents have had to 'parent' at high level for so long that they are exhausted. I suspect many of them are desperate for someone to wave a magic wand or take over for them.
- Lots of anxiety / worry being expressed e.g. what will happen when I die? / not grasping the point of an example as already seeing the worst case scenario for their child (e.g. A→B→C – I feel hot→ I open the window → 'you couldn't do that with him he'd jump out of it')
- Safeguarding worries around the parents difficulties with setting boundaries and how this will develop as the children get older / bigger / stronger
- Issues of time – unable to cover everything in the plan – would the group benefit from being longer? Need to revise the aims of each session?
- Parents' lack of knowledge about their children's conditions? - accompanied with reference to a lack of insight into how the condition may impact on the child and consequently the family
- Concerns that Services are not providing enough work to parents around bereavement and loss (of the valued child / their expectations / themselves...) Are parents aware that these will be ongoing issues?

- Facilitators find the group promising, very relevant and much appreciated.

Week 3:

- Group felt more subdued this week? (Or perhaps quieter as parents had had some success and there wasn't so much pressure to make the facilitators understand how difficult things are?)
- 1 parent in particular seems to have a lack of understanding about her child's condition and expressed wanting the facilitators to tell her what to do (& not wanting to discuss this with school).
- Parents are trying to manage the routine, not manage behaviour – life is like a treadmill?
- Much more difficult for the parents of non-verbal children – facilitators need to re-inforce the amount of time it will take to make changes.
- Helpful to have an experienced parent in the group (motivation)
- Parents' resistance linked to fear of the group not working for them? (What else do they have?).
- Group are gelling which makes it easier for parents to be there?
- Effects of language and culture on understanding of dx and what is expected of professionals?
- Group could be considered a success if parents start looking at specific behaviours v. the whole
- PP: In my experience most parents are somewhat reserved when it comes to parenting groups as this may mean different things to them, for instance it is their fault, having to share personal experiences with total strangers, on top to doubt about the effectiveness of the group, as parents may expect things that are not realistic too.

Week 4:

- Issue of the language used in LD – do parents understand that their children will plateau?
- Only 2 attendees but they are making good progress
- Groups to run for longer? Be fortnightly?
- Ax before the group? (for our understanding, to have similar peers etc.)
- Different groups for different ages? EI, post-dx etc...

Week 5:

- Importance of spouse, wider family, resources etc.
- Group is bonding well
- Parents are picking up on things and using strategies
- Group should be aimed at younger children due to aggression etc.?
- Cultural Issues e.g. washing plates
- To emphasise consistency more.

Week 6:

- Tiredness / exhaustion in parents (due to CYPs not sleeping)
- Helpful to have a mum in the group who has tried things that have worked and can analyse discussion topics
- Difficult for some parents to extract from their non-LD children or to think of consequences
- Need to expand the initial psychoed session to include expectations →no 'magic wand', CYP's potential for change, parents emotional needs, behaviours will be replaced with others etc.

Week 7:

- This week felt positive, good engagement – more concrete (still had difficulties generating and identifying consequences)?
- Parents are developing more patience for the group as time goes on – there is more than 1 technique to be learnt, they are experiencing successes which increases motivation etc.
- Building on +ve experiences
- Less of a verbal v non-verbal child issue between parents?
- Importance of relationships with school – learning goes both ways
- Parents are beginning to learn and recognise when they are re-inforcing their child's unwanted behaviours
- Parents are becoming more confident (∞ self as expert) e.g. 'I'm the one coming to the group, I'm the one who knows what to do'.

Week 8:

- Parents reported appreciating the group and the chance to speak freely without being judged (they don't want to speak to people who will feel sorry for them or who don't understand).
- 1 parent suggested we meet the kids at the Registration Session so that parents know which other parents to share with and facilitators know the limitations etc.
- Some parents still find it difficult to transcend the difficult situation and problem-solve one thing at a time.
- 1 experienced parent helps to hold the structure for the rest of the group
- Some parents are growing in confidence and appreciating they are being taught 'tools'
- Time-Out: parents know the concept, but are not applying it to these children.
- 1 parent's mood (-ve) can set the tone of the group.

Group 2 Reflections

Registration Session:

- Helpful to have this at the school as parents seemed to have already made more of a commitment to attend the group
- Gave the parents a chance to share about their children.
- Some parents still appeared to need more time though as they found it difficult to think of achievable / feasible goals for their child – should parents have gone through the psycho-education group first?
- The group felt like it had already begun to cohere.

Session 1: - cancelled due to snow

- Helpful to think about this in advance for winter groups i.e. to state specifically to parents that the group is running unless they hear otherwise and to take parents' mobile numbers?
- 2 parents did attend and chose to stay for the whole session and seemed to really want / need to space to talk about their children and share ideas.
- 1 parent who may be masking the difficulties she is experiencing and being overly-positive. May need to ensure she can get what she needs from the group and support her in listening to others.

Session 2:

- The setting of goals in the registration session meant that it was possible to make up for last week's missed session and combine 'what is behaviour' and 'play / special time', although these are still topics that would fit into 2 separate sessions to allow more time to go over what ABC charts are etc.
- Queries over if a couple of the parents have enough English to get the most out of the group.
- 1 parent is quite negative about these things working and will use other parents' examples as well as her own to support this.
- Different stances taken by the group can facilitate discussion e.g. how to react when criticised by other parents – defensive v upset etc.

Session 3:

- The whole session was spent on discussing the homework, probably as a result of doing 2 topics last week and the previous missed session.
- No tea break which was the no. 1 ground rule set by the parents!!
- All parents had tried to do ABC charts and special time, even if they had had difficulties and this allowed for useful discussion.
- Only 10mins at the end to be able to cover this week's topic – interesting to think about different ways of managing this e.g. whether to leave it for the following week or to still introduce it and set it as homework to facilitate further discussion next week.

- Importance of validating and being non-blaming in the group e.g. when 1 parent is able to talk about things working better with her husband than when she tries.
- 1 parent is very negative and will pick up on other parent's examples to ask how we are going to solve those rather than just thinking about her own child – a little confrontational, but also due to frustration / loss / limited knowledge / unrealistic expectations. Need to think about the best way to deal with this for benefit of both mum and the group – to speak to mum outside of the group, to set limits on discussing other parents' problems, to validate how difficult things are and hope her viewpoint will shift gradually from hearing others...
- Issues around asking parents to set boundaries if the parents are not boundaried themselves.
- N: 'This group has two strong characters. One who is positive, proactive and motivated and another who appears to be at the other end of the spectrum. I wonder if some of this is because one made a choice about adopting the boys whereas the other has been denied a normal child. For me, it is a pity she seems unable to recognise and value his positive attributes, achievements, behaviours etc.'

Week 4:

- The parent who had been struggling had had some small success in the week and was given a lot of positive praise herself for what she had achieved. This did not generalise to the 2nd half of the group, but may start to generalise with other small successes.
- Cultural issues in the routines / way of life from other countries that may contrast more strongly with an autistic child + less understanding of concepts such as need for / breaking routines etc.
- 'Routines' was a good session to have in the week before half-term
- 2 parents were missing today which left 5 and this seems more manageable in terms of time
- Helpful to have one parent who is positive, has good ideas and has achieved a lot.

Week 5:

- Facilitators spaced out where they sat to encourage discussion v debate
- One parent made a comment that another parent didn't need to be in the group as she was doing so well, led the other parent to then feel she had to prove herself?
- Main dynamic in the group involves these 2 parents.
- Parents quite sensitive to whether or not their child has language abilities.
- English as a 2nd language becoming more pertinent with one parent who often gives the same example when it comes to him and so may not be picking up on techniques. Not possible in a group setting to fully compensate for language difficulties.

Week 6:

- Issues continuing around some jealousy (?) or parents of children with language.
- One more negative parent still dominating the group, but perhaps a slight turning point with lots of reinforcement about what she is doing well / achievements.
- One parent definitely struggling with language - keeping up with the group discussion and applying what has been discussed to his child.
- Some parents miss put on group time/support, because other parents are more dominant - may not get a chance to discuss their homework, get feedback from the group, ensure they have understood etc. Hard to know whether or not they are managing to apply the techniques outside of the group?

Week 7:

- Only 4 parents (due to a school closure and an appt). One of the more dominant members of the group was not there and the other dominant member gave her feedback last, which allowed other members of the group to speak more.
- One of the parents that may have less language was able to speak quite a lot and this gave the opportunity to explore how much he has understood (or not understood) which felt helpful. It may be useful if the other parent with limited language is able to go first next week so that he has the same opportunity?
- However, one parent still dominating the conversation during the topic of the day which impacts on the time for the other parents and may have been less manageable if all the parents had been there.
- Issue of whether or not parents can / should access their own therapy outside of the group and how much we are able to discuss this with them / facilitate this for them. Tolerance of anxiety seems to be a particular issue for one parent and this will always get in the way of her ability to try things out.
- Ongoing importance of facilitators modelling what is being taught e.g. consistency – parents encouraged to use this with their children, but also necessary for parents to show this in the group e.g. one parent has missed a couple of sessions and today left early and it is not clear if she will be able to get the most out of the group.

Ideas for next group:

- Parents to write a profile of the child pre-group?
- More psycho-education needed at the start, particularly around LD (may be more likely to have had some for ASD etc?)
- To add in a psychoeducation session and increase the group to 11 weeks. Perhaps in shorter terms ignoring and time-out could be combined.
- To give out LD resource pack in first session and design a goals sheet.

Appendix B: Parents' Feedback

Group 1 Feedback:

AG: 'I think we discussed most of the things during the group discussions, but still I would like to be always consistent and persistent because I get very weak during holidays and I give him missed messages about how I handle him other times.'

DP: would like 'being more consistent, understanding and calm'.

CF (Session 4): 'the session was very useful especially the rewards and praise'

AG (Session 2): 'I like attending the group. I feel although it is Parent's group, we have enough time to discuss individual cases in depth.'

Group 2 Feedback:

HP (Session 2): 'A lot of food for thought'

KT (Session 3): 'very fantastic programme'

HP (Session 3): 'I wish these sessions were longer. Perhaps we could make tea at the start so we don't need to break?'

HP (Session 4): 'tea at start was great, thanks (helped with my personal routine)'

KT (Session 5): 'very good'

KT (Session 6): 'very good'

MT (Session 8): 'very good'

JP (Session 8): 'I think a session about looking after ourselves and reducing our stress levels would be helpful. I think sometimes stress means we don't think straight and when we are more relaxed we can cope better with things like consequences, boundaries, special time etc.'

CR: would like 'being persistent and consistent, making consequences happen, be strong about dealing with a situation and plan ahead'

JN: would like 'not to get too angry, try to get more confident every day, to be more consistent'

JN: 'Thanks so much for your efforts and help towards our problems, you were very helpful and very knowledgeable and good to understand my problems, all very useful, you do an excellent job! ☺ My favourite group ever, even when I've cried'.

Main Research Project

‘Trauma-related psychological processes and psychotic-like experiences in adolescent inpatients’

Supervised by Drs. Suzanne Jolley, Amy Hardy & Sophie Browning

Statement of Contribution

The author (RP) developed the research questions and hypotheses in consultation with the project supervisors (SJ, AH and SB). The study was conducted in collaboration with two other studies (a DClinPsy and MSc project), and had several shared measures (e.g. PLEs, mood and functioning) with other questionnaires selected specific to the hypotheses of the individual studies. The questionnaires were administered together in order to maximise the number of participants for each study, as they were drawing from the same population. The author and other students equally shared the data collection and data entry, with the author then taking responsibility for data analysis and interpretation for the current study, with input from the project supervisors.

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0 Abstract

Background and rationale: A large proportion of young people endorse psychotic-like experiences (PLEs) and/or trauma and both have the potential to lead to a number of negative outcomes. There are phenomenological similarities between PLEs and post-traumatic stress (PTS) symptoms and the literature suggests that there are shared psychological processes between the two, and a common route between the experience of trauma and later PLEs. Hypothesised psychological mechanisms have included attachment, stress sensitivity and coping styles (affect regulation), information processing and intrusive memories, and emotions and appraisals. The majority of the research in this area has been in adult, community-based populations.

Aims: This study aims to better understand the links between trauma, trauma-related processes and PLEs in an adolescent inpatient setting. The study also aims to provide recommendations for future research and treatment in this area and extend the findings already available in the adult literature into the adolescent domain.

Method: Forty-six young people, aged 12-18, were recruited from adolescent inpatient wards in a South London Child and Adolescent Mental Health Service. The study design was cross-sectional and participants completed measures concerning general functioning, the experience of PLEs and trauma, dissociation at the time of the trauma and since, trauma-related appraisals and PTS symptoms.

Results: A large majority of the sample had experienced both PLEs and trauma. Significant associations were found between PLE severity and trauma frequency (particularly victimisation trauma frequency) and between PLE severity and the hypothesised trauma-related processes.

Conclusions: This study extends the adult literature to show that the experience of trauma confers an environmental and social vulnerability to the later experience of PLEs in adolescents. Trauma and PLEs are highly prevalent in the adolescent inpatient population and may be causing significant levels of distress. Targeting trauma-related psychological processes has the potential to reduce the young person's distress. It appears that taking a transdiagnostic, symptom-focussed approach would be more beneficial than using a diagnostic-led approach to treatment.

1 Introduction

1.0 Overview

Intervening early to improve mental health outcomes for children is a current United Kingdom governmental priority (Department of Health, DoH, 2013). Childhood unusual or psychotic-like experiences (PLEs), and early traumatic or adverse life events, are linked with vulnerability to a range of adult psychopathology, including the serious mental health condition of psychosis (e.g. Bebbington et al., 2011; Fisher, et al. 2013). Moreover, robust evidence from studies of adult psychosis and emerging evidence in young people with PLEs suggests associations and potential causal links between trauma and psychotic symptoms. Better understanding of the associations between PLEs and trauma in childhood will help to inform interventions to reduce both current distress and, potentially, future vulnerability to adverse mental health outcomes.

To date, there has been little investigation of trauma, PLEs and trauma-related processes in children and young people¹, using robust assessment methods. This thesis will thus present a study examining the rates and characteristics of trauma and PLEs in an adolescent inpatient sample. The study will investigate trauma-related factors hypothesised to play a role in the pathway from trauma to PLEs, namely trauma frequency, trauma type (victimisation or non-victimisation), dissociation, post-traumatic appraisals and post-traumatic stress (PTS) symptoms. This study aims to build on the current evidence base by focusing on childhood PLEs, using contemporaneous, direct child report assessments of trauma and symptoms rather than parental report or retrospective adult report, to minimise the influence of observer and memory biases and of intervening events on reporting.

This introduction will review the current literature on the definition and prevalence of PLEs, PLE outcomes and factors influencing outcomes in relation to cognitive-behavioural models of psychosis. The definition and prevalence of trauma and post-traumatic stress disorder (PTSD) will be outlined, and cognitive-behavioural models discussed. The literature on the phenomenological similarities between PLEs and PTS symptoms will be considered, followed by a review of the prevalence of PTSD in psychosis and the associations between PTSD and psychosis. The introduction will conclude with an outline of the rationale for examining the associations between trauma, trauma-related processes and PLEs, and hypothesised routes between trauma and PLEs will be proposed.

¹ The terms ‘child’ and ‘young person’ will be used interchangeably to refer to individuals under the age of 18. Age will be specified when this information is available and applicable. When the term ‘young people’ includes over 18s (for example in Early Intervention samples), I will specify that the sample includes adults.

Chapter 2 will describe the methodology used in the study. The results will be presented in Chapter 3. Chapter 4 will discuss the theoretical and clinical implications of the findings, and critically reflect on the study.

1.1 Childhood PLEs

1.1.1. Definition and prevalence

PLEs are perceptual phenomena that seem strange, unusual or out-of the ordinary, in the absence of a diagnosed psychotic disorder. PLEs constitute non-clinical phenomena and can be transitory (e.g. Thapar et al., 2012). Individuals may endorse hearing voices or sounds that no one else can hear, seeing things others can't see, having magical or paranormal ideas, or thinking that people are following them or spying on them (Laurens, Hobbs, Sunderland, Green & Mould, 2012). PLEs are characterised by alterations in perceptions of reality (Fonseca-Pedrero et al., 2011). They are qualitatively similar to symptoms in an illness episode, but quantitatively less severe in terms of intensity, persistence, frequency and impairment (Fonseca-Pedrero et al, 2011).

PLEs have a greater prevalence than the clinical phenotype of psychosis (van Os, Linscott, Myin-Germeys, Delespaul & Krabbendam, 2009). Over 50% of 7,966 children aged 9-11 in a general population sample reported PLEs, with around 15% (a third of those reporting PLEs) reporting distressing PLEs, (Laurens et al., 2012). In a generic community Child and Adolescent Mental Health Services (CAMHS) setting, around half of the children referred report distressing PLEs (Ames et al., 2013). The prevalence of PLEs in young people is higher than in adults, but reduces with age: rates of 21-23% were reported for early adolescence (aged 11-13 years) and 7% for older adolescents (aged 13-16 years) in a community sample of 2,666 young people (Kelleher et al., 2012). PLEs may therefore be considered a normative experience (Murray & Jones, 2012) which can, for some, be associated with distress and disability.

1.1.2 PLEs and outcomes

Subthreshold PLEs are not inherently pathological and may constitute part of typical development (Laurens et al, 2012). However, they are also associated with increased risk of developing a range of mental health conditions, including psychosis, in later life (e.g. Fisher et al., 2013).

Psychosis was traditionally conceptualised as a discrete, categorical phenomenon (Kraepelin, 1896). However, later research found that psychotic symptoms appeared to fall along a continuum of experience, and vary in severity across a range of dimensions such as

frequency, distress and impact (Strauss, 1969). A key factor in determining the transition to later psychosis appears to be PLE persistence, influenced by PLE-associated distress and poor coping. This association was found in a general population sample of 2,230 adolescents initially tested at age 10-11 and followed up for six years (Wigman et al., 2011a). Similarly, in a German sample of 845 adolescents, those who went on to develop psychosis at eight-year follow-up had experienced more persistent PLEs at baseline (Dominguez et al, 2011). Therefore, helping young people to manage their PLEs adaptively has the potential to prevent future difficulties and improve resilience (Maddox et al., 2012). This also has a wider societal impact, as the estimated annual cost of psychosis to the UK economy is nearly £12billion (The Schizophrenia Commission, 2012).

Individuals with persistent PLEs may also experience other forms of distress. In a sample of 2,243 young people, those who reported PLEs had at least one other non-psychotic mental health difficulty and this association increased with age (Kelleher et al, 2012). In a prospective sample of 8,099 children aged 9-11, persisting PLEs were associated with both internalising and externalising psychopathology in later childhood (Downs, Cullen, Barragan & Laurens, 2013). Using a birth cohort of 1,037 children followed to 38 years old, PLEs at age 11 were found to be associated with higher rates not only of schizophrenia, but also of PTSD and suicide attempts (Fisher et al, 2013). These predictions still held when controlling for potential confounders, such as gender, socioeconomic status and other childhood psychopathology. PLEs have also been associated with higher levels of suicidal behaviour in both clinical and non-clinical samples of adolescents (Kelleher et al, 2012).

In terms of wider functioning, a study of 566 pairs of twins aged 18-45 in the general population were assessed for PLEs at three time points over two years and classified as being either low or persistent in terms of their experience of PLEs; those in the persistent group exhibited worse psychosocial functioning (Wigman et al, 2011a). Of particular relevance to this thesis, individuals were more likely to be in the persistent group if they had experienced childhood trauma and/or stressful life events during the study period.

1.1.3 PLE subtypes and outcome

Recent research has sought to investigate whether specific types of PLEs are more likely to lead to later difficulties. Laurens et al (2012) found that, whilst almost two-thirds of a sample of 7,966 children aged 9-11 endorsed PLEs, it was hallucinatory experiences that differentiated children at risk of developing later illness. Wigman and colleagues (2011b), investigating large adolescent general population samples (n=5,422 and n=2,230) reported that hallucinations had the highest rates of associated distress and psychopathology.

Yung and colleagues (2006) assessed a non-psychotic clinical sample of 140 young people and classified PLEs into bizarre experiences (BE), persecutory ideas (PI) and magical thinking (MT). The authors found the BE and PI subgroups were associated with depression, distress and poor functioning and concluded that there may be more malignant forms of PLEs in the general population. In another study Yung and colleagues (2009) assessed a community sample of 875 school children and added a further sub-classification of PLEs, perceptual abnormalities (PA), and found that BE, PI and PA were associated with depression, distress and poor functioning, whilst MT again was not.

Armando and colleagues (2010) surveyed 1,882 high school and university students and identified 4 subtypes of PLEs: BE, PA, PI and grandiosity. The authors found that students with bizarre or persecutory ideas were more likely to experience distress and concluded that the experience of PLEs is not homogenous, with not all PLEs conferring the same risk of later distress. These studies have implications for identifying individuals at high risk of entering a prodromal phase of psychosis, and intervening before they transition to a psychotic episode. It appears important to target interventions at those experiencing hallucinations and feelings of persecution and/or those whose PLEs appear particularly bizarre.

1.2. Trauma and PTSD

1.2.1. Trauma: definition and prevalence

Childhood trauma is a broad term that refers to a range of negative life experiences that are experienced by children and young people. These include physical, sexual and emotional abuse and neglect (Larkin & Read, 2008), as well as exposure to domestic and community violence and witnessing the death of a close other (Dorsey, Briggs & Woods, 2011). They may also include sudden separation from a loved one or learning that a loved one has experienced a trauma, such as a natural disaster or road traffic accident (Copeland, Keeler, Angold & Costello, 2007). Children and young people may experience one-off traumatic events, repeated exposure to the same kind of trauma, or multiple types of trauma during childhood and beyond (Finkelhor, Ormrod & Turner, 2009). Traumas can be categorised according to whether they involved victimisation (i.e. intentional harm from another person(s)) or not (i.e. events involving non-intentional harm or threat of harm such as accidents).

In recent years, research has begun to consider bullying as a childhood trauma. Bullying is highly prevalent in British schools with official prevalence rates of up to 32% (James, 2010).

It is noted that this may be an underestimate as much bullying is un-reported and 'cyber-bullying' in particular is on the increase. Most young people leaving school are thought to have been exposed to bullying at some point, either as the bully, victim or a witness (James, 2010). Bullying may also be experienced by young people in peer groups that are independent of school (www.bulliesout.com).

A nationally representative sample of 2,030 children and adolescents in the USA found that over half had been exposed to traumatic events in the preceding year. Rates of victimisation traumas ranged from 4% for physical neglect to 63.4% for exposure to community violence. 11% had been exposed to six or more direct victimisations (Finkelhor, Shattuck, Turner, & Hamby, 2013). A recent UK representative study investigating rates of victimisation trauma in 2,275 young people aged 11-17 and 1,761 young adults aged 18-24 found that almost a quarter had experienced some form of serious physical, sexual or emotional childhood abuse or neglect (Radford, Corral, Bradley, & Fisher, 2013). In adult studies, a recent national population sample of 2,953 adults in the USA found that 89.7% reported exposure to at least one trauma during their lifetime. 53.1% had experienced physical or sexual assault and this was the most highly endorsed trauma (Kilpatrick et al., 2013).

1.2.2. Psychosocial impact of trauma

It was initially assumed that trauma reactions in children and young people were short-lived (Masten, Best & Garmezy, 1990). However, this view was based on reports from parents and teachers, who were under-reporting levels of distress. It has since been established, through asking young people directly, that they do experience long-lasting and distressing effects of trauma (Dalglish, Meiser-Stedman & Smith, 2005).

Childhood trauma has been associated with negative mental health, physical health and social outcomes, both in childhood and adult life (Anda et al., 2006). Abuse in childhood has been identified as a causal factor for a number of mental health difficulties in adults, not only PTSD but also depression, anxiety disorders, substance misuse, eating disorders and personality disorders (Larkin and Read, 2008). People with a history of childhood abuse have been shown to have longer and more frequent hospitalisations (with their first admission at a younger age), to spend longer in seclusion, be prescribed more medication, experience more severe symptoms and pose greater risk of self-injury (Read, van Os, Morrison & Ross, 2005). They are more likely to be in need of mental health services as adults (Anda et al., 2007). Childhood trauma has also been associated with irritable bowel syndrome, rheumatoid arthritis, and autoimmune disorders (Mulvihill, 2005).

Trauma exposure can impact on functional outcomes, leading to detrimental consequences such as chronic physical health problems and low educational and occupational achievement (Wethington et al., 2008). Young people with a history of trauma report a significantly high prevalence of disturbed behaviour and are more vulnerable to self-harm and suicide (Hainsworth, Starling, Brand, Groen & Munro, 2011). Such young people are also less likely to be employed as adults (Fisher et al., 2013). As such, it is a priority for clinical services to develop effective ways of engaging and supporting young people with a history of trauma, using theoretically informed treatment, in order to optimise outcomes for this client group.

1.2.3. PTSD: definition and prevalence

PTSD is defined in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) as exposure to a traumatic event, which is experienced with intense fear, helplessness or horror. Reactions to the traumatic event involve persistent re-experiencing and avoidance and symptoms of hyperarousal. These reactions must be present for at least one month and lead to clinically significant distress and impairment in functioning (APA, 1994). Changes to the conceptualisation of PTSD in DSM V (2013) include defining it as a trauma or stress-related disorder, rather than an anxiety disorder, re-classifying what constitutes a traumatic event (e.g. inclusion of any type of sexual violation, that indirect trauma must be accidental or violent, and exclusion of criterion A2: the presence of fear, horror and helplessness during trauma) and the addition of a fourth diagnostic cluster: negative cognitions and mood (APA, 2013). Given the recent change in diagnostic criteria, research evidence and current assessment tools are based largely on DSM IV criteria, which will also be the main focus in this thesis.

Most children who are exposed to traumatic events appear to emerge relatively unaffected, with either no or only minor difficulties. However, a meta-analysis of 34 studies found the rate of young people (aged 21 or younger) meeting PTSD criteria after experiencing a traumatic event was between 24% and 60%, depending on trauma severity (Wethington et al, 2008). Further research is needed to confirm the characteristics which differentiate young people who go on to experience psychological difficulties from those who do not, but it appears that factors including the ability of significant adults to cope with the trauma may be particular risk factors (Wethington et al, 2008).

Copeland et al (2007) surveyed 1,420 children and found that over two thirds had experienced at least one traumatic event by the age of 16. Many of the children had experienced multiple traumas. Although less than 0.5% met the criteria for PTSD, 13.4% went on to develop some sub-threshold Post-Traumatic Stress (PTS) symptoms related to

their experience, as assessed by parental and child report on the Child and Adolescent Psychiatric Assessment.

A structured online assessment of a national sample of 2,953 US adults found that 89.7% had been exposed to a trauma, with the majority again exposed to multiple traumas. Lifetime rates of PTSD in this sample were 8.3%, while 12month prevalence rates were 4.7%; prevalence rates were found to increase in line with increases in the amount of exposure to trauma (Kilpatrick et al, 2013).

1.2.4. Cognitive models of PTSD

Cognitive models of PTSD have attempted to explain the observation that, whilst anxiety is generally associated with future threat, PTSD involves a sense of *current* threat about a *past* event. Ehlers and Clark (2000) posit that individuals with PTSD process the trauma in a way which gives rise to this sense of current threat. Current threat arises as a consequence of poor elaboration of the trauma memory, due to arousal during trauma resulting in enhanced data driven processing and inhibited conceptual processing. The poorly elaborated trauma memory is insufficiently integrated with other autobiographical memories, and lacks contextual information indicating it occurred in the past. The result is that intentional recall is poor, whilst involuntary memory retrieval is enhanced. Involuntary retrieval can be triggered by a wide range of trauma-associated internal or external stimuli, leading to distressing and threatening intrusions. The trauma memory is exacerbated and maintained by negative appraisals of the trauma and its consequences. These appraisals perpetuate the sense of threat, and together with intrusions, result in maladaptive coping strategies such as thought suppression, emotional and behavioural avoidance, and other safety behaviours. These threat reduction strategies ultimately maintain the intrusive memories and trauma-related appraisals, as they prevent further processing and elaboration of the memory and evaluation of the beliefs (Ehlers & Clark, 2000).

1.3. Accounting for PLE outcome: Cognitive-behavioural models of psychosis

Hallucinations can occur in times of sensory deprivation or isolation, can be induced by the individual and often occur during times of physiological or emotional stress (Morrison, Wells & Nothard, 2000). Delusional beliefs have been explained in terms of the human desire to search for meaning and to ascribe meaning to events; the thought processes involved in normal thinking and delusional thinking are similar, with the difference coming from the amount of resistance to disconfirmatory evidence (Fonseca-Pedrero et al., 2011).

Recent cognitive-behavioural models of psychosis provide an account of how PLEs may develop and be maintained, and provide indications of how trauma may impact on symptoms. Garety and colleagues (2001) proposed a cognitive model of the positive symptoms of psychosis whereby an individual's biopsychosocial vulnerability is triggered in the presence of a stressor, leading to emotional changes and anomalous experiences, which, in the presence of an externalising appraisal, results in the development of positive symptoms. An individual's vulnerability to developing psychosis depends on their genetic and psychological dispositions, as well as the environmental and social factors that they are exposed to. Importantly, social factors can include traumatic experiences such as adverse environments, periods of isolation and negative life events, such that trauma can potentially play a key role in the development of psychosis, through its impact on cognitive and affective processes (Garety et al, 2001).

An alternative model proposed by Morrison (2001) also highlights the importance of traumatic experiences in the later experience of PLEs and psychosis. In this model, positive symptoms are seen as cognitive intrusions into awareness that are appraised in a culturally unacceptable way, therefore leading to distress and disability. Not only are the intrusions and their appraisals potentially experienced as traumatic in themselves (i.e. threatening the person's physical or psychological integrity), but it is also proposed that traumatic experiences may either directly cause the later intrusions (through a memory route) or create a vulnerability to such experiences (through the impact on beliefs) (Morrison, 2001). In both models, ongoing traumatic stressors may also contribute to the maintenance of PLEs and episodes of psychosis, as they may exacerbate stress levels and associated processes. Trauma and trauma-related psychological processes are therefore important to investigate in order to improve our understanding of PLE development.

1.4. Trauma, PTS symptoms and psychosis

As described, PLEs and trauma are relatively common experiences in childhood and adolescence and may lead to a number of negative outcomes including PTSD and psychosis. It is therefore necessary to understand the factors contributing to PLEs in order to reduce these maladaptive outcomes. Cognitive behavioural models of psychosis implicate trauma-related psychological processes as possible mechanisms of distress. Understanding the link between trauma, trauma-related psychological processes and PLEs will support the development of effective interventions targeting underlying mechanisms. Treating psychosis without addressing trauma-related processes may worsen the course of psychosis and increase vulnerability to relapse (Kilcommons & Morrison, 2005). Before considering the

possible role these mechanisms may play in PLEs, the relationships between trauma and psychosis will first be reviewed.

1.4.1. Phenomenological similarities between PLEs and PTS symptoms.

Many mental health difficulties have common features, which supports the view that psychopathology is characterised by a network of overlapping factors that have a reciprocal impact on each other (Wigman et al., 2012). As such, it may be that, for some individuals, PLEs and traumatic stress reactions are different ways of classifying the same issues.

Both trauma re-experiencing and hallucinations are often experienced as intrusions that are involuntary and accompanied by high affect. The content of hallucinations and delusions can reflect trauma, suggesting similar processes may play a role in their occurrence (Holmes & Steel, 2004). Thompson and colleagues (2010) found that those with a history of sexual trauma reported PLEs with sexual content and Falukozi and Addington (2012) confirmed that the content of PLEs is important in understanding responses to past trauma. The latter study found that psychological bullying was the most commonly reported trauma in a high risk group of young people and that increased experience of trauma was significantly associated with grandiose beliefs regarding status, power and feeling watched or followed.

An investigation into 100 clinical cases of individuals diagnosed with psychosis found that 89% reported at least one adverse childhood experience (e.g. maltreatment, neglect, illness and bullying). The voices that these individuals experienced followed the adverse experience and the identity of the voice reflected the individual's lived experience (Corstens & Longden, 2013). An association between childhood abuse and the content of delusions was investigated in 39 individuals with psychosis. Childhood abuse was associated with grandiose delusions and the sense of a 'defected self' (Mason, Brett, Collinge, Curr & Rhodes, 2009).

In addition to the phenomenological similarity between PTS and psychosis, it is also documented that they exacerbate each other. For example, avoidance of trauma-related stimuli following interpersonal trauma may mean that close relationships are lost and the resultant reduced social contact and social isolation is a predictor of relapse in psychosis, due to the absence of meaningful stimulation and lack of opportunity for reality testing with others (Larkin & Morrison, 2006). The PTSD symptom of increased physiological arousal is also associated with a poor prognosis in psychosis, particularly when it becomes chronic, as the overgeneralisation of vigilance may affect the person's ability to assess actual

probabilities of threat, meaning that they are more vulnerable to further traumas (Larkin & Morrison, 2006).

Before the diagnostic category of PTSD was described, many of its symptoms would have been taken as evidence of schizophrenia (Seedat, Stein, Oosthuizen, Emsley & Stein, 2003). For example, if a client describes vivid perceptual experiences and these experiences resemble a previous trauma, this is likely to be interpreted as the client experiencing PTSD flashbacks. However, if the client describes these perceptual experiences as real and current, this is likely to be interpreted as psychosis (Larkin and Morrison, 2006), even though they may have the same maintaining processes.

1.4.2. Prevalence of trauma and PTSD in psychosis

Given the implicated role of trauma in psychosis, and phenomenological overlap, research has sought to investigate the rates of trauma and PTSD in psychosis. The rates are found to be higher in adult and young people samples than in the general population. For example, Achim and colleagues (2011) found PTSD prevalence rates of 12.4%, in contrast to rates of approximately 3.5% of the general population. Grubaugh, Zinzow, Paul, Egede and Frueh (2011) conducted a meta-analysis of rates of trauma and PTSD in adult patients who were already experiencing an episode of severe mental illness. They found that rates of trauma exposure were higher in these individuals than in the general population, with prevalence rates varying between 49% and 100%; 75% to 98% having experienced multiple traumas. The prevalence of victimisation traumas, such as physical and sexual abuse and assault, were particularly high in individuals with severe mental illness. Some individuals had also experienced a trauma whilst in psychiatric care, which led to reduced engagement with treatment programmes. High rates of trauma were found whether the studies used behavioural measures, or assessment tools specifically asking about trauma. Grubaugh et al (2011) found that fewer studies had investigated the rates of PTSD in individuals with severe mental illness. Where this had been investigated, prevalence rates ranging from 4% to 90% were found.

Kelleher and colleagues (2008) compared 117 adolescents at high risk of experiencing mental health difficulties with a control group. Those that endorsed PLEs were more likely to have experienced physical abuse and bullying and/or to have witnessed domestic violence. Thompson and colleagues (2009) also investigated a high risk, prodromal, group of young people and found that 97% had experienced at least one trauma; this was significantly associated with positive symptoms, in particular paranoia. Hainsworth and colleagues (2011) found that, within an adolescent in-patient sample with hallucinations and delusions, those

who had experienced trauma showed an increase in disturbed behaviours, for example self-harm and substance misuse; this made them a group that were more difficult to treat.

1.4.3. Associations between trauma and psychosis

Given the implicated role of trauma in psychosis, high rates of trauma and PTS in psychosis and phenomenological overlap between PTS and PLEs, research has investigated associations between trauma and psychosis. This evidence will be considered in relation to cross-sectional, general population studies, prospective research and symptom specific studies.

A number of studies over the last decade have focused on investigating associations between trauma and psychosis in general population samples. For example, a significant relationship between traumatic life events and PLEs (both of which were measured by the Composite International Diagnostic Interview) was found in a large scale community survey by Scott, Chant, Andrews, Martin and McGrath (2006) in Australia. Spauwen, Krabbendam, Lieb, Wittchen and Van Os (2006) explored a community sample of 2,524 young people in Germany. They found that the relationship between trauma and PLEs increased in a dose-response fashion, even after controlling for confounders (i.e. gender, socio-economic status, urbanicity, cannabis use and time), and was stronger in those with a pre-existing vulnerability to psychosis. The authors concluded that there was a direct influence of trauma on the development of later psychosis.

In the UK, Bebbington et al. (2011) used data from the British Psychiatric Morbidity Survey and found that non-consensual sex was significantly associated with diagnosed psychosis, with an odds ratio (OR) of 2.74 (95% CI 1.4 – 5.25). Shevlin, Dorahy and Adamson (2007) found that childhood physical abuse was a significant predictor of diagnosed psychosis; these effects were magnified by further contact abuse and had a significant cumulative relationship. The British Psychiatric Morbidity Survey results also showed a significant cumulative relationship between sexual abuse, serious illness, injury or assault and violence in the home and later diagnosed psychosis, with those experiencing two or more trauma types significantly more likely to experience psychosis. (Shevlin, Houston, Dorahy & Adamson, 2008). Notable associations were found for the experience of violence at home (OR 2.16, 95% CI 1.21 – 3.87), molestation (OR 2.51, 95% CI 1.17 – 5.42), serious illness, injury or assault (OR 2.94, 95% CI 1.77 – 4.89), childhood physical abuse (OR 4.20, 95% CI 1.94 – 9.13) and sexual abuse (OR 5.69, 95% CI 3.22 – 10.06).

The above studies are cross-sectional and so it is not clear whether they support a causal role for trauma in psychosis. Prospective studies have attempted to examine if there is evidence in support of a causal relationship between trauma and PLEs. A review by Larkin and Read (2008) found a significant dose-effect relationship between the number of traumas experienced and the risk of later psychosis and concluded that the experience of trauma is a causal factor for psychosis, particularly with regard to hallucinations.

Bechdolf and colleagues (2010) undertook a prospective study of an ultra high risk for psychosis population, finding that 69.6% had experienced trauma, 21.7% of which then developed a first episode psychosis. There was an increased risk of transition for those who had experienced childhood sexual abuse, which the authors suggested was more likely to constitute a repeated trauma. Arseneault et al. (2011) followed a nationally representative UK cohort of 2,172 twins for seven years. After controlling for potential confounders including socio-economic status, IQ, internalising and externalising difficulties, maternal history of psychosis and genetic risk, the authors found that experiencing any trauma in childhood conferred an increased risk of PLEs at age 12. Non-victimisation events, in this case accidents, had an OR of 1.47, while victimisation events involving an 'intention to harm' were higher; bullying OR was 2.47 and maltreatment by adults OR was 3.16. There was also a dose response relationship between cumulative trauma and PLEs (Arseneault et al, 2011).

A recent meta-analysis by Varese and colleagues (2012) examined a number of studies conducted over 21 years, and focused specifically on the relationship between childhood trauma and psychosis. It included prospective cohort studies, large-scale cross-sectional studies and case control studies. The authors suggested that, whilst an association had been posited between early trauma and later psychosis, previous reviews (e.g. Bendall, Jackson, Hulbert & McGorry, 2008) had been inconclusive and so this remained an area of controversy. Studies were included if traumatic events were measured at the individual level, had occurred prior to age 18 and psychosis diagnosis or psychotic symptoms were assessed. This resulted in 41 eligible studies with sample sizes between 32 and 17,337. Across all studies, there were significant associations between all types of abuse in childhood and later PLEs and psychosis, suggesting that childhood adversity is a significant risk factor for developing psychotic symptoms (OR 2.78, 95% CI 2.34 – 3.31). Of those studies included which investigated if there was a dose-response relationship between trauma and later psychosis, nine out of ten found that this relationship was positive (Varese, Barkus & Bentall, 2012).

Traumatic events appear to cluster significantly in the weeks or months preceding the onset of psychosis and these traumatic experiences include a particular prevalence of severe interpersonal victimisation (Fowler et al. 2006). Kilcommons and Morrison (2005) investigated a sample of 32 adults with psychosis and found that 94% had experienced a traumatic event and that 53% met criteria for PTSD, although only one person had been given this diagnosis. In this sample, physical assault led to more positive symptoms of psychosis, whilst sexual assault and depersonalisation led to more hallucinations. The authors concluded that both PTSD and psychosis may be part of a spectrum of responses to trauma (Kilcommons & Morrison, 2005). Similarly, Bentall, Wickham, Shevlin and Varese (2012) used data from the Adult Psychiatric Morbidity Survey to explore associations between specific traumas and later psychosis (as assessed by the Psychosis Screening Questionnaire); this gave information from 7,353 individuals in the general population aged over 16. Childhood sexual abuse was found to be significantly associated with hallucinations, while being brought up in institutional care was significantly associated with paranoia. Physical abuse was associated with both hallucinations and paranoia.

Mueser, Rosenberg, Goodman and Trumbetta (2002) proposed a model whereby PTSD influences psychosis. This occurs both directly through specific symptoms, such as avoidance, hyperarousal and re-experiencing, and indirectly through common correlates such as re-traumatisation, substance abuse and difficulties with interpersonal relationships and social support.

In summary, earlier cross-sectional studies indicated a relationship between trauma and psychosis, with prospective studies further supporting a potential causal role for the experience of trauma (particularly frequent trauma) in the later development of PLEs and/or psychosis. Victimisation trauma in childhood appears to be particularly key and it appears there may be specific associations between sexual abuse and hallucinations and between physical abuse and paranoia.

1.4.4. Summary: Why it is important to understand the relationship between trauma and PLEs

PLEs are an aspect of a multifactorial vulnerability to later psychosis, which also includes traumatic life events. Given the prevalence of trauma, PTS symptoms and PLEs in young people, and associations between trauma and psychosis in adult samples, examining the associations between these variables may assist in understanding the psychological mechanisms underlying distressing PLEs and suggest targets for intervention.

The rationale for trauma-informed clinical practice is supported by surveys conducted in countries including the US, UK, New Zealand and Australia. Findings revealed that members of the public tend to correlate PLEs with adverse life events rather than biological or genetic factors, which are in fact associated with increased fear and prejudice (Read, Haslam, Sayce & Davies, 2006). It has also been argued to be more productive, both theoretically and clinically, to conduct research into specific cognitions and behaviours than into wider constructs such as ‘schizophrenia’, which has been demonstrated to have poor validity and reliability (Bentall, 2004).

Adolescents and young adults report preferring a more normalising approach to their difficulties, such as focusing on the role of social factors, than an illness model (Larkin & Morrison, 2006). However, it is known that pre-adolescents (9-11 year-olds), and young adolescents (under 14 years) tend not to report their PLEs, even to their families, unless they are directly asked (Ames et al, 2013; Laurens, Hodgins, Taylor & Murray 2011). Those who have experienced trauma are also reluctant to disclose this unless they are asked and in a safe, supportive environment (Read, Hammersley & Rudegeair, 2007). In addition, protocols for the systematic assessment and treatment of trauma, PTS symptoms and any associated PLEs have yet to be widely adopted in routine mental health services for children and young people. Trauma-related PLEs are, therefore, likely to be an area of unmet need and important to research in order to develop recommendations for clinical practice.

This study aims to investigate potential explanatory routes from traumatic experiences to PLEs in young people, drawing on recent theoretical and research evidence relating to the psychological processes that might account for the relationship.

1.5. Understanding the route from trauma to psychosis

The studies described so far all suggest that childhood trauma can contribute to later psychotic symptoms and other studies have attempted to investigate why this may be. Examining mechanisms accounting for the relationship between trauma and PLEs is important, because trauma has been found to be associated with psychosis in both clinical and non-clinical populations; therefore it is likely that maladaptive reactions to trauma may determine maladaptive clinical outcomes.

Romme and Escher (2006) found that, even in the general population, voice hearers attribute their voices to traumas that they have undergone and that it is the consequences of the trauma, rather than the trauma itself, that leads to voices. The difference in this study between those who experienced the voices with distress compared to those who did not

appeared to be due to a number of reasons, including differences in the amount of traumas experienced, differences in the consequences of the trauma, how the person coped with the trauma and how much identity formation they had achieved pre-trauma (Romme & Escher, 2006). As rates of trauma, particularly victimisation trauma, are similar in need for care and non-need for care samples (Lovatt, Mason, Brett & Peters, 2010), this suggests that it is trauma-related psychological processes that influence whether or not distressing PLEs develop.

In psychosis samples, three types of psychological processes have been indicated as contributing to maladaptive psychotic symptoms; these will each be considered in turn.

1.5.1 Attachment, stress sensitivity and coping styles

Traumatic experiences in childhood impair the child's ability and opportunity to develop secure attachments, particularly if the trauma is experienced at the hands of a caregiver or involves the loss of the caregiver. Whilst a secure attachment allows the child to feel safe to explore the world and progress through the stages of normal development, an insecure attachment can make the individual more vulnerable to perceived stress and less able to have developed adaptive coping strategies to deal with such stress. This vulnerability may be both biological, in terms of altered brain development, and also psychological in terms of the individual having less resilience (Bowlby, 1980).

More specifically, Read et al (2005) suggested that trauma may lead to a disruption of the Hypothalamus-Pituitary-Adrenal (HPA) axis, which acts as a vulnerability factor and causes heightened sensitivity to stress. This can manifest as hyperarousal (through sympathetic nervous system activation) and dissociation (through parasympathetic activation). In turn, these processes can lead to hallucinatory experiences (potentially as they prevent trauma memories from being processed and contextualised), with delusions perceived as being faulty attempts to explain trauma-related hallucinations. Similarly, Kelleher et al. (2008) and Bechdolf et al. (2010) also suggested that trauma experiences may lead to an acquired vulnerability of enhanced sensitivity to stress involving the HPA axis and that this may contribute to psychosis development under stressful circumstances. Arseneault et al. (2011) found trauma to be a predictor of PLEs over and above genetic liability and suggested that PLEs in young people could be a result of neurodevelopmental changes in the HPA axis following repeated traumatic experiences.

It has been suggested that children need a secure attachment in order to develop their theory of mind and the ability to distinguish between internal and external stimuli e.g.

hallucinations (Bentall, 2006). In line with Read and colleagues' approach, Gumley et al.'s model of attachment and psychosis suggests that habitual affect regulation styles may be adopted through early trauma as a way of managing threat both intrapersonally and interpersonally. The immediate need for the individual is to regulate threat, but such a strategy can lead to dissociative, avoidant and hypervigilant or anxious styles of coping (Gumley et al., 2014).

In support of a potential role for trauma-related attachment processes in psychosis, insecure attachment was predictive of paranoia, but not hallucinations, in a non-clinical sample (Pickering et al, 2008). In a clinical sample, Gumley et al. (2014) found evidence that avoidant attachment was associated with the positive symptoms of psychosis, with a modest association for anxious attachment and positive symptoms. Sitko et al. (2014) used data from the National Comorbidity Survey to further investigate the role of attachment in the route from trauma to PLEs. They found that hallucinations were associated with childhood sexual abuse and that this relationship was partially mediated by anxious attachment. They also found that paranoid beliefs were associated with neglect and that this relationship was fully mediated by anxious and avoidant attachment. They suggest that early traumatic experiences can disrupt early attachment relationships and so lead to adaptations in attachment style; insecure attachment styles become a risk factor for later difficulties, whilst secure attachments would confer a protective factor.

In line with the proposal that coping styles, potentially arising from maladaptive attachments acquired early in childhood, play a role in psychosis, Bak et al. (2005) investigated the association between trauma, PLEs and coping strategies. Using a longitudinal design they followed 4,045 Dutch individuals with no prior experience of psychosis, with and without exposure to trauma before the age of 16, for three years. An association was found between trauma and later experience of PLEs, with a higher prevalence of trauma in those whose PLEs were experienced with more distress and a lower sense of control. It was hypothesised that those individuals who went on to develop psychosis had less effective coping responses to PLEs.

One type of attachment-based affect regulation strategy that can become prevalent in those who have experienced trauma is dissociation. Romme and Escher (2006) suggested that dissociation is a survival strategy following trauma and PLEs as it creates a substitute and partial split from the self that had these experiences. Dissociation is a way of turning the aggression and suffered powerlessness towards the self, getting rid of unwanted emotions and moving from existing problems to a fantasy solution while attempting to deny or

transform what has happened (Romme & Escher, 2006). Victimisation may increase threat perception, leading to the potential for later mental health difficulties (Arseneault et al., 2011). Dissociation, on an experiential and neuropsychological level, does reduce emotional experience and therefore can be seen as playing a protective role in response to the threat posed by trauma and its consequences.

In the longer-term, dissociation can become a maladaptive coping strategy. Allen et al. (1997) investigated the impact of dissociation on the route between the experience of trauma and later PLEs and suggested that dissociative detachment can undermine the individual's grounding in their external world. This affects their ability to carry out accurate reality-testing. Scott et al. (2007) examined a large community sample in Australia and found a link between previous trauma and experiencing delusions. After controlling for other risk factors such as age, gender, previous psychosis and substance dependence, they found that dissociation seemed to play a role in the route between trauma and delusions. More recently, Varese et al. (2012) found that people with hallucinations and a history of childhood sexual abuse reported a higher propensity to dissociate, and this was shown to mediate the relationship between trauma and hallucinatory experience.

1.5.2 Information processing and intrusive memories

Models of psychosis (e.g. Hemsley, 2004) and of PTSD (e.g. Brewin, 2001) refer to similar psychological processes in their explanations of why intrusions develop, suggesting that information processing disruptions to memory encoding and retrieval following trauma may contribute to the relationship between trauma and PLEs. For example, both models suggest a disruption of spatial and temporal encoding occurring primarily in the hippocampus, and it is proposed that this disruption may be particularly marked in people with a vulnerability to psychosis (Holmes & Steel, 2004). In the presence of trauma, individuals may be experiencing very fragmented / decontextualised intrusions that manifest as PLEs.

More specifically, Steel et al. (2005) propose that the relationship between trauma and PLEs is mediated by a data-driven processing style, which prevents contextual integration of the trauma so that memories of the trauma are misinterpreted. It is the strength of the contextual integration (which occurs while memories are being encoded) that influences the nature of subsequent intrusive experiences and how frequently they occur (Steel et al., 2005). In support of the view that information processing disruptions may give rise to intrusive memories which contribute to psychosis, Holmes and Steel (2004) found a significant relationship between positive symptoms of psychosis and trauma-related intrusions.

Gracie et al (2007) also found that re-experiencing symptoms following trauma were most strongly associated with a predisposition to hallucinations. Bendall et al. (2013) investigated a group of individuals experiencing a first episode of psychosis and found that those who had also experienced childhood sexual abuse had more severe hallucinations and delusions. Importantly, the authors also found that this risk was mediated by post-traumatic intrusions and selective attention towards traumatic stimuli. Hardy et al. (2005) found that there was a thematic relationship between trauma and psychosis-related intrusions. In their sample of 40 participants with psychosis and a history of trauma, 12.5% experienced hallucinations with a similar theme and content to the trauma, and 45% experienced hallucinations with a similar theme to the trauma. These studies all support a potential role for trauma-memory intrusions in psychosis.

1.5.3 Emotions and appraisals

Emotional changes that occur following a triggering event play a key role in the occurrence of anomalous experiences and in an internal, unusual experience being appraised as external and threatening to the well-being of the individual. Emotional processes and appraisals also maintain the distress from the PLE (Garety et al., 2001).

Trauma and PTSD reactions may contribute to later PLEs and influence their route into psychosis. The trauma contributes to negative emotions and self and other evaluations, which will shape psychosis and its contents (Fowler et al., 2006). For example, if a person perceives themselves as 'bad' or 'weak' because they were victimised, then the person will be alert to persecution from others and feel a sense of vulnerability. The experience of being persecuted will then serve to maintain the negative schemas and lead to negative emotions. Humiliating experiences in particular may be linked to catastrophic appraisals of social inferiority relative to others (Fowler et al., 2006). Self-critical rumination regarding the evaluation of the self in relation to others arising from trauma, could also shape voice content and appraisals of the relationship with voices, providing an indirect association between the experience of trauma and hallucinations (Fowler et al., 2006).

A significant relationship between bullying and PTSD has been demonstrated in adult studies (Matthiesen & Einarsen, 2004), but there has been limited research in child and adolescent populations where bullying may influence the development of negative beliefs about the self and the world (Campbell & Morrison, 2007). Amongst a sample of 373 school pupils aged 14-16, the experience of being bullied was found to be significantly related to hallucinations, paranoia and dissociation, mediated by negative post-trauma cognitions about the self and the world and positive beliefs about paranoia (Campbell & Morrison, 2007). The

authors concluded that bullying could constitute a traumatic event and also suggested that PLEs could lead to further victimisation and rejection from peers, thus forming a vicious cycle. It has also been demonstrated that bullying others can lead to future difficulties, including PLEs (Kelleher et al., 2008). The young people in this sample that had bullied others had been victims of other traumas themselves and it may be of benefit to provide support both to those that are the victims of bullying and also the bullies.

Consistent with the proposal that trauma-related emotions and appraisals contribute to psychosis, are studies highlighting negative thematic relationships between the phenomenology of trauma and psychotic symptoms. For example, 17 people with schizophrenia who had been abused reported experiencing derogatory, commenting voices, ideas of reference and paranoid ideation (Read & Argyle, 1999). Associations between intrusive traumas and persecutory delusions (Raune et al, 2006) and hallucinations with an intrusive theme (Hardy et al., 2005) have also been found. It has also been argued that grandiose delusions are the product of experiencing stressful events involving loss (Raune et al, 2006).

Other authors have also found that emotions can affect the relationship between trauma and psychosis. For example, Freeman and Fowler (2009) found that anxiety mediated the relationship between trauma and paranoia, and Lardinois, Lataster, Mengelers, Van Os and Myin-Germeys (2011) found that stronger emotional and psychotic reactions to small daily stressors are associated with childhood trauma. Such reactions confer an acquired vulnerability to later PLEs, but may also mean that any sense of coercion into treatment is also experienced as traumatic (Lardinois et al., 2011) and so may ultimately impact on outcomes.

Fisher, Appiah-Kusi and Grant (2012) extended previous findings to show that the relationship between childhood trauma and paranoia is partially explained by anxiety, but also by negative beliefs about the self, in a clinical study of 212 adults. Gracie and colleagues (2007) suggested that negative beliefs about the self and others were most strongly associated with a predisposition to paranoia in a non-clinical study of 228 students. Van Nierop et al. (2014) investigated both a clinical and non-clinical sample in a large scale study of 6,646 adults. They found an association between increased frequency of trauma and increased severity of psychosis, which was mediated by social defeat in the clinical population (and also affective dysregulation in the general population).

In children who have experienced a trauma, it has been demonstrated that their negative appraisal of a sense of ongoing vulnerability is predictive of distress responses to the trauma (Salmon, Sinclair & Bryant, 2007). The authors suggested that acute stress reactions were associated with a sense of vulnerability to imminent harm, whereas enduring distressing symptoms were associated with worries regarding a permanent change in themselves and their world.

The evidence presented here suggests that emotion and appraisals play a central role in the relationship between trauma and PLEs, with trauma-related appraisals of particular importance.

1.5.4 Furthering the understanding of the relationship between trauma and psychosis/PLEs

The current literature provides robust evidence for an association between the experience of trauma in childhood and later PLEs and/or psychosis. However, the majority of the studies have investigated adult samples. Those that have investigated young people have tended to use either general population or school samples. The studies using clinical samples have investigated young people who have a diagnosis of psychosis, are already in the prodromal phase of the illness or have an ultra-high risk of developing psychosis. Very few studies have considered PLEs in broad clinical settings, and none has investigated PLEs in an inpatient adolescent sample. This study seeks to further the literature by assessing relationships between trauma, trauma type, trauma-related psychological processes and PLEs in an adolescent inpatient sample presenting with a range of difficulties, not exclusively psychosis, or at-risk of psychosis. Trauma-related processes implicated in the relationship between trauma and psychosis include affect regulation, intrusive memories, and trauma-related beliefs. In the current study, their role in PLEs will be examined through the assessment of trauma-related dissociation, appraisals, hyperarousal and re-experiencing.

1.6. Summary and the Current Study

A proportion of the adolescents admitted to in-patient units in the UK will be suffering from psychotic-like experiences (PLEs). Many of these young people will have become unwell in the context of trauma. This may have been a one-off trauma such as witnessing the death of a close other, being assaulted or being involved in a road traffic accident. It may also have occurred during ongoing trauma such as violence in the home, bullying, being involved in gang-related activities or experiencing sexual abuse. There is an increasing interest in the relationship between trauma and PLEs and how best to support and treat people with these very distressing experiences. Most of the studies undertaken have been in adult populations

and there has been a call for more research to be undertaken in the area of young people's reactions to traumatic events (Dalgleish et al., 2005).

Distortions in the experience of the self and the world may mean that, when a traumatic experience evokes an emotional reaction and appraisal, the extreme emotion that results prevents the memory from being contextualised into autobiographical knowledge and so the information-processing abnormalities involved in PTSD become exaggerated (Fowler et al., 2006). This heightens the individual's vulnerability to psychosis, as their need to create a personal and autobiographical narrative for experiences that have become distorted emotionally may lead to the formation of delusions. As a consequence of the issues described, those with psychosis are not just attempting to adapt to previous traumas, but also to personally significant day-to-day stressors (Fowler et al., 2006).

Cognitive therapy is recommended for adults with psychosis, and the new draft NICE guidance for psychosis in under 18's echoes these recommendations and in addition recommends psychological intervention for PLEs if they are distressing (NICE, 2013).

Young people in this study will be asked directly about their experiences, as previous studies have shown a discrepancy between young person and carer reports of PLEs (Laurens et al, 2011). Parent-child agreement on symptoms of PTSD is slightly better, but still lags behind other (more common) disorders (Meiser-Stedman, Smith, Glucksman, Yule & Dalgleish, 2007). This will be a retrospective study, but Varese et al. (2012b) found that both prospective and retrospective studies gave similar rates of trauma.

1.6.1 Aims

This study aims to better understand the links between trauma, trauma-related processes (e.g. dissociation, maladaptive appraisals and PTS symptoms), and PLEs in an adolescent inpatient setting in order to develop mechanism-specific targeted interventions for the treatment of trauma-related PLEs, as we would expect these to be more efficacious (given results from other mechanism-specific interventions) compared to general CBT for Psychosis. The final aim of the study will be to provide recommendations for future research and treatment in this area and extend the findings already available in the adult literature into the adolescent domain.

Based on population and Community Child and Adolescent Mental Health Services prevalence reports, it is anticipated that at least half of the inpatient population will report PLEs with distress, and at least half of these will have experienced trauma.

1.6.2 Hypotheses

The hypotheses are:

1. More frequent trauma experiences will be associated with greater PLE severity
- 1b. More frequent victimisation trauma will be associated with greater PLE severity and more frequent non-victimisation trauma will not be associated with greater PLE severity
- 1c. More frequent sexual abuse will be associated with more severe voices/visions and more frequent physical abuse will be associated with more severe paranoia.
2. More severe peri-traumatic dissociation and post-traumatic dissociation will be associated with greater PLE severity
3. Higher rates of maladaptive post-traumatic appraisals will be associated with greater PLE severity.
4. Higher rates of PTS symptoms (intrusions, avoidance and hyperarousal) will be associated with greater PLE severity.

2 Method

2.1 Ethical Approval

Ethical approval for this study was granted by the Brent National Research Ethics Service (NRES) Committee (REC Ref 12/LO/1984). Research and Development approval was granted by the South London and Maudsley R&D committee (ref R&D2013/038) and the CAMHS Clinical Academic Group (CAG). These approvals can be found in Appendix A. Information sheets for carers and young people, and related consent and assent forms are in Appendices B and C.

2.2. Design

This study was a cross-sectional, correlational design aiming to assess the prevalence of Psychotic Like Experiences (PLEs) and trauma in an adolescent inpatient sample. It also aimed to assess associations between trauma frequency (total, victimisation events and non-victimisation events), trauma-related psychological variables (i.e. peri-traumatic dissociation, post-traumatic dissociation, post-traumatic appraisals and the post-traumatic stress symptoms of re-experiencing, avoidance and hyperarousal) and PLEs (measured by a total severity score).

2.2.1 Participants and Service Setting

The present study recruited young people aged 12-18 years old from two National and Specialist inpatient child and adolescent mental health (CAMHS) wards located within Tier 4 of the South London and Maudsley (SLaM) NHS Foundation Trust. The majority of the young people admitted to the wards require full inpatient care, but day patient treatment may be used as a step down service before they are discharged, or as a means of preventing an inpatient admission.

The inclusion criterion for the study was any young person admitted to a CAMHS inpatient ward in SLaM. Exclusion criteria were a moderate to severe learning disability or a lack of capacity to provide informed consent (e.g. due to symptom severity), as judged by the lead clinicians on the ward.

As the assessment measures were English language only, the ward teams were aware that an interpreter would be arranged if a non-English speaking young person wished to take part.

2.3 Measures

All assessment measures are included in Appendix D.

2.3.1 Demographics

Demographic information was obtained from the electronic patient medical records system, with consent from young people and their carers. This information included gender, ethnicity, age at assessment, age of first episode, age of first contact with services, mental health diagnosis at admission, number of previous inpatient admissions, parental mental illness and substance use.

The information on age at first episode and age at first service contact was gathered from clinical admission summaries, which are often based on self-report from the young person and/or their families.

2.3.2 General Functioning

The Children's Global Assessment Scale (CGAS) was developed by Shaffer et al (1983) and adapted from the Global Assessment Scale (Endicott, Spitzer, Fleis & Cohen, 1976) which measures overall severity of psychiatric disturbance in adults. The CGAS is a clinician rated numeric scale (from 1 to 100) to assess the general functioning of children under the age of 18 over a specified time period. It is based on the hypothetical continuum of health→illness. The scale ranges from 0 (not able to function across all areas) to 100 (superior functioning in all areas), with anchors defining the ratings across the continuum. Ratings on the CGAS scale are independent of any mental health diagnosis. A summary of the rating points for the CGAS is shown in Figure 1.

Figure 1. CGAS rating points

100-91 DOING VERY WELL
90-81 DOING WELL
80-71 DOING ALL RIGHT – minor impairment
70-61 SOME PROBLEMS – in one area only
60-51 SOME NOTICEABLE PROBLEMS – in more than one area
50-41 OBVIOUS PROBLEMS – moderate impairment in most areas or severe in one area
40-31 SERIOUS PROBLEMS – major impairment in several areas and unable to function in one area
30-21 SEVERE PROBLEMS – unable to function in almost all situations
20-11 VERY SEVERELY IMPAIRED – so impaired that considerable supervision is required for safety
10-1 EXTREMELY IMPAIRED – so impaired that constant supervision is required for safety

According to the scoring criteria for the CGAS, a score below 61 is indicative of ‘caseness’: those young people with a diagnosis, where the combination of the diagnosis and the impaired functioning means that they are likely to be in need of services (Bird, Yager, Staghezza, Gould, Canino & Rubio-Stipec, 1990). The CGAS is intended for use by highly trained clinicians such as psychiatrists, psychologists, nurses and social workers, and has been found to be reliable between raters and over time (Bird et al., 1990), with acceptable levels of discriminant and concurrent validity (Shaffer et al., 1983). In the current study, the CGAS was administered at admission by the clinical team.

2.3.3 Psychotic Like Experiences (PLEs)

PLE severity was assessed using the Psychotic Like Experiences Questionnaire (PLEQ) developed by Laurens and colleagues (2007) to identify unusual experiences in young people. This is a nine-item scale, using items derived from diagnostic interview, measuring the frequency of PLEs, associated distress and impact on the child’s life, over the last two weeks, with an additional question assessing occurrence over the last year. Five items were adapted from the Diagnostic Interview Schedule for Children (Costello, Edelbrock, Kalas, Kessler & Klaric, 1982) and measure concerns regarding thoughts being read, being sent special messages through the TV, paranoia, hearing voices and sense of physical change to the body. The remaining four items assess replacement of will, the ability to mind read, grandiosity and visions. Each PLE is rated on a three point scale of conviction (0 = not true, 1 = somewhat true, 2 = certainly true).

For each PLE which the young person endorses as somewhat or certainly true, follow-up questions are administered regarding the frequency, distress and functional impact of the PLEs (Ames et al, 2013). Responses are rated on a four point scale (0-3; higher scores indicating greater frequency, distress or impact) and added to the conviction scores to derive a total PLE severity score, ranging from 0-99, with higher scores indicating greater severity. The severity score for each individual PLE ranges from 0-11, reflecting whether the individual experienced the PLE or not, how often they experienced it, how much it upset them and how much it made things hard at home or school. For any PLE that is endorsed by the individual as having caused distress and/or impact, this is named an Unusual Experience with Distress (UED). Young people were also asked to identify their ‘main’ (most upsetting or causing the most problems) PLE.

The PLEQ was validated in a large community sample (Laurens, Hodgins, Maughan, Murray, Rutter, & Taylor 2007; Laurens et al, 2011). Internal consistency for the total PLE score from scales used with children aged between 9 -12 years old is high (0.82) and there is

satisfactory agreement with clinical interview (Laurens et al., 2007). Similarly, Mackie, Castellanos-Ryan & Conrod (2011) found good internal consistency for the measure at four time points, each six months apart, (0.74–0.81) in a sample of Australian adolescents. Satisfactory construct validity based on item response theory has also been demonstrated (Laurens, Hobbs, Sunderland, Green & Mould, 2012). Other research has confirmed it is possible to accurately detect PLEs in the general adolescent population using a very similar short, self-report questionnaire (Kelleher, Harley, Murtagh & Cannon, 2011).

2.3.4 Trauma checklist

Experience of trauma was assessed using a frequency rating of ten common victimisation and non-victimisation traumatic events (see below) developed specifically for this study, based on adult trauma checklists, by an expert in trauma and psychosis (Hardy, personal communication). Each item was rated either 0 (never happened), 1 (happened only once) or 2 (happened more than once). A total frequency score was calculated by adding up the frequency of all the trauma types experienced and this provided the primary measure of trauma in the current study. Presence or absence of experienced trauma was a dichotomous yes/no variable.

The traumatic event types included: a) illness or being very poorly or sick; b) being in a serious accident; c) being in a natural disaster like an earthquake or tidal wave; d) other people hurting me in some way physically; e) other people hurting me in some way sexually; f) other people hurting me in some way emotionally; g) seeing somebody else seriously hurt or killed; h) being bullied; i) contact with mental health services that was scary or threatening (like coming into hospital, reactions of family, friends or staff); j) other problems or experiences that led to coming into hospital that were scary or threatening (like hearing voices, seeing unusual things, thinking someone or something was out to harm you).

Following completion of the trauma checklist, young people who had endorsed experiencing a trauma were asked to identify their currently most upsetting trauma. For this trauma, they were asked how old they were when it started and how old they were when it stopped (if it had stopped). Participants were also asked regarding DSM IV criterion A2 (APA, 1992), i.e. if they were seriously injured or thought they might die or be seriously hurt; if someone else had been seriously injured or killed, or they thought someone else would die or be seriously hurt; and if they had felt very scared, helpless or horrified during the event. Participants were then asked to complete an assessment of PTSD in relation to this event (see section 2.3.8 below).

The trauma checklist had good internal consistency, $\alpha = 0.78$, with no increase in internal consistency to be achieved by removal of items.

2.3.5 Dissociation

Peri- and post-traumatic dissociation were assessed using eight screening items; four items asking young people about dissociation at the time of the trauma and four items asking young people about dissociation since. These items were developed by Meiser-Stedman for an unpublished study concerning traumatic experiences in young people (Meiser-Stedman, personal communication). The items were based on criteria from the supplementary interview items for the Anxiety Disorders Interview Schedule for assessing Acute Stress Disorder dissociation symptoms (Silverman & Albano, 1996).

The dissociation scale showed good internal consistency, both for the full scale ($\alpha = 0.89$) and for the component peri-traumatic ($\alpha = 0.81$) and post-traumatic ($\alpha = 0.82$) subscales, with no increase in internal consistency to be achieved by removal of items.

2.3.6 Child Post-Traumatic Cognitions Inventory (CPTCI)

The CPTCI is a 25-item measure of maladaptive trauma-related cognitions, developed for use with children and adolescents (Meiser-Stedman, Smith, Glucksman, Yule, & Dalgleish, 2008). It was developed from the adult Post-Traumatic Cognitions Inventory (Foa, Ehlers, Clark, Tolin & Orsillo, 1999) and validated within a large sample of young people aged 16-18 with a history of trauma. A component analysis found that the scale contains two components, labelled 'permanent and disturbing change' and 'fragile person in a scary world'. The CPTCI showed good reliability and validity and the two components also showed good reliability, convergent and discriminate validity and internal consistency (Meiser-Stedman et al, 2008).

2.3.7 Trauma Appraisals

Four items were designed specifically for the study in order to investigate levels of blame and the attribution of blame in relation to the most distressing trauma. The items were: 'I blame myself', 'I blame other people – and they meant to harm me', 'I blame other people – but they didn't mean to harm me', and 'I don't blame anyone, it wasn't anyone's fault, they just happened'. Each item was rated on the following 4-point Likert scale: 'don't agree at all', 'don't agree a bit', 'agree a bit' and 'agree a lot'.

The blame scale was not internally consistent, $\alpha = 0.16$ and internal consistency could not be improved by removal of items. Item-total correlations were low and so the blame items were considered as separate items rather than a total blame score.

2.3.8 Children's Revised Impact of Events Scale (CR-IES 13)

The Impact of Events Scale (IES) was originally developed by Horowitz, Wilner & Alvaraz (1979) to assess the re-experiencing of traumatic events and associated avoidance and numbing symptoms in adults. The IES is a 15 item, four-point scale, with two subscales of Intrusion and Avoidance. A revised IES (R-IES) was developed to reflect DSM-IV criteria for PTSD (APA, 1994) which also included a hyperarousal symptom cluster. The CR-IES 13 is designed for use with children aged 8 years and above who are able to read independently (Smith, Perrin, Yule, Hacam & Stuvland, 2002). It is a 13-item scale, consisting of 4 items measuring intrusions, 4 items measuring avoidance and 5 items measuring hyperarousal, reflecting the categories of the DSM-IV (APA, 1994). The CR-IES 13 has good face and construct validity, sensitivity and specificity (Perrin, Meiser-Stedman & Smith, 2005).

2.4 Procedure

2.4.1 Piloting and service user involvement

Information sheets, consent forms, the questionnaire pack and the study procedure were discussed with a focus group of young people from one of the inpatient units, and the assessment battery was piloted with other young people from the units who volunteered to do so. Particular attention was directed to the young people's experience of completing the trauma checklist. No content changes were suggested. Young people reported that they would routinely discuss these issues on the ward anyway, and that they felt safe to do so. Minor amendments were suggested regarding layout and design of measures (e.g. regarding the spacing of measures and using different pictures), which were implemented before commencing recruitment.

2.4.2 Recruitment

The wards were provided with information sheets about the present study and the researchers also visited the wards to meet the staff teams and answer any questions about the study.

For young people under 16, identified by the clinical team as potential participants, their parental responsibility (PR) holders were given an information pack, either directly by the ward team or via post, containing a letter of introduction, the carers' information sheet and a consent form. Telephone contact was then made by one of the researchers. PR holders were offered the option of either discussing the study over the phone and then returning the consent form to the ward, or meeting with one of the researchers in person. PR holders were asked for consent to their young person being approached to be told about the study. If the PR holder gave consent, the young person was approached directly and given the young

person's pack which included an information sheet and an assent form. The researcher read through this with them and answered any questions that they had.

Those young people aged 16 or over were approached by a member of the ward team and asked if they would be willing to meet with one of the researchers. If they agreed to be approached, they were given the young person's information pack and the researcher supported them to consider if they wanted to provide informed consent.

2.4.3 Assessment procedure

All meetings with the young people took place on the ward. It was made clear to both parents and young people that their treatment on the ward would not be affected by participation or non-participation in the study and that they could withdraw from the study at any time and without giving a reason why. Confidentiality was discussed and it was highlighted that any risk information would be communicated with the team. This was particularly relevant to the trauma measures and confidentiality was reviewed again at this time.

The trauma and PLE measures were administered along with measures of affective disturbance, affect regulation, cognitive functioning and reasoning, as part of a larger study. Questionnaires were administered as close to the young person's admission date as was feasible in terms of gaining consent/assent and the young person's mental state. The measures were administered and completed using pen and paper. Young people could choose either to fill them in themselves or with support from the researcher.

The full questionnaire pack took approximately 40 minutes to complete. The majority of the young people completed this in one meeting, but they were aware that they could have as many meetings as they wished; no young person required more than two meetings to complete the questionnaires. On visiting the inpatient units, the researcher met with a member of ward staff to ensure they were aware of any risk issues in that young person and any current issues on the ward, and that it was appropriate to approach the young person on that occasion.

On completion of the questionnaires, all participants were given a £5.00 voucher for a stationery shop.

2.4.4 Power Calculation

A community study of adolescents found large associations (0.4, 0.45) in regression analyses between life events, emotional disturbance and unusual experiences (Ames et al., 2013). For the current study, identification of a large effect (the average of the effects found by Ames

and colleagues, 0.425), in a correlational model with 80% power and alpha set at 0.05, required a sample of 41 participants.

2.4.5 Distribution of data and testing for normality

The main test variables deviated significantly from a normal distribution according to the Shapiro-Wilk test of normality (see Appendix E) and so non-parametric tests were used throughout. Spearman Rank Order Correlations were used to test for associations between the main study variables. A regression analysis was used to test the relative contributions of trauma frequency and any significant trauma-related correlates to total PLE severity score. The model was checked for violation of assumptions before proceeding, using the Durbin Watson test to detect autocorrelation in the residuals (values range from 0-4, with extremes indicating violation of assumptions and values between 1 and 2 being acceptable, Durbin and Watson; 1950; 1951), collinearity diagnostics to check the independence of statistical predictors [collinearity tolerances (values > 0.1 indicating acceptable collinearity) and variance inflation factors (values < 10 indicating acceptable multicollinearity)] and the Shapiro-Wilk test to check the normality of the distribution of standardized residuals (Field, 2010).

2.4.6 Missing Data

The participants completed the questionnaires that were applicable to them. Participants who had not endorsed a trauma, or who reported that they did not experience any distress related to a trauma were not required to complete the trauma-related measures. If participants chose not to answer individual items within the measures, then the total score for that measure was pro-rated by dividing the total score obtained by the number of items answered and then multiplying this by the number of items in the measure. In the regression analysis, any missing data were replaced with the mean.

2.4.7 Analysis

Descriptive analyses, including means, standard deviations and percentage frequencies, were calculated for demographic variables: age, gender, ethnicity, admission diagnosis and CGAS. Ethnicity was dichotomised into White British or Black/other Minority Ethnic Group (BME) due to the small sample size. Diagnosis was classified into mood disorders, psychotic disorders, eating disorders, anxiety disorders, emerging personality disorder and any other diagnosis.

Variation in the primary variables of interest by demographic factors was assessed using Spearman Rank Order Correlations for age, and by Mann-Whitney U tests for ethnicity and gender.

The main analyses were conducted on those participants who endorsed both PLEs and having experienced a trauma. All statistical analyses were computed at a $p \leq 0.05$ significance level, two-tailed, using SPSS 21.0 (IBM, 2012). Preliminary correlational analyses for each hypothesis tested the relationship between the dependent variable of PLE total severity score and the following independent variables: trauma frequency, victimisation and non-victimisation trauma frequency, peri-traumatic dissociation, post-traumatic dissociation, post-traumatic appraisals, PTS re-experiencing, PTS hyperarousal and PTS avoidance symptoms.

Correlational analyses were also used to test the relationship between the trauma types of sexual abuse and physical abuse and the PLE types of voices, visions and paranoia.

For those correlations that were found to have a significant relationship, a linear regression analysis was conducted to test the relative contributions of the independent variables to the total PLE score. All of the significant correlates were entered into the model, with the exception of victimisation trauma which was subsumed within the total trauma frequency. A backwards elimination linear regression was then conducted.

2.5 Ethical Considerations

The main ethical issue present in this study was the routine enquiry, in a research context, about the experience of traumatic events. It was possible that some of these events may not have been disclosed previously and/or may have been ongoing, necessitating involvement from other services and appropriate safeguarding procedures. The clinical teams on the inpatient units were given information about the study at all stages of its development and were invited to give feedback about the measures and the recruitment procedure. Young people were also invited to give feedback on the measures (their wording and the wording of the instructions) in the piloting stage.

Participants were reminded again before completing the trauma checklist that the researchers would be sharing this information with the clinical team and that other agencies may also need to be involved for certain disclosures. Participants were also reminded that it was their choice if they wanted to complete the trauma checklist and to say more about what their most distressing trauma involved. Participants were asked to feedback if they had found any of the questionnaires difficult or upsetting and were offered the opportunity to have a member of the care team present while with the researcher or to speak to a member of the care team after participating, if they wanted to do so.

3 Results

3.1 Characterising the Sample

3.1.1 Clinical and Demographic Characteristics

Forty seven young people were recruited from two inpatient adolescent units; one later withdrew their consent and is therefore not included in this analysis, leaving a final sample of 46. Forty four (95.65%) of the young people were inpatients at the time of the study and two (4.35%) were day patients. The majority of the sample was female (67.39%, $n = 31$) and White British (73.91%, $n = 34$), reflecting the demographics of the units that were recruited from. None of the participants required the use of an interpreter. Ethnic backgrounds of participants are reported in Table 1.

Table 1

Ethnicities of participants ($n=46$)

Ethnicity	n	Percentage
White British	34	73.91
White Irish	1	2.17
Any Other White	5	10.87
Background		
Mixed White and Black	1	2.17
African		
Indian	1	2.17
Bangladeshi	1	2.17
Caribbean	1	2.17
Any Other Black	1	2.17
Background		
Not Stated	1	2.17
Total non-BME*	34	73.91
Total BME	12	26.09

*BME: Black and minority ethnic

The young people in this sample ranged in age from 15 to 17 years old, with a mean of 16 years and 5 months. Their age at first episode ranged from 5 to 17 years old, with a mean of 13 years and 6 months, and their age at first contact with services ranged from 4 to 17 years old, with a mean of 14 years and 2 months. For each of these age ranges, the sample was skewed towards the older end.

The majority (95.65%, $n = 44$) of the young people had a mental health diagnosis at admission (see Table 2), the most common of which were mood and psychotic disorders. The Children's Global Assessment Scale (CGAS) scores at admission ranged from 6 - 63, with a mean of 37.72 and a standard deviation of 11.51, indicating significant functional

impairment. Number of previous inpatient psychiatric admissions ranged from 0 - 5, with a mean of 0.70 (SD = 1.26).

Table 2

Admission diagnosis of participants (n=46)

Diagnosis on Admission Category	n	Percentage
Mood Disorders	12	26.09
Psychotic Disorders	9	19.57
Eating Disorders	6	13.04
Anxiety Disorders	5	10.87
Emerging Personality Disorder	5	10.87
Other	7	15.22
No diagnosis given	2	4.35

Nineteen of the participants (41.30%) had at least one parent with their own mental health difficulty, three (6.52%) had a parent with a possible mental health difficulty and for 14 participants (30.43%) this information was not known. Fifteen (32.61%) of the young people reported that they had used substances, while 19 (41.30%) had not used substances; for 12 participants (26.09%) this information was not known.

A Mann-Whitney U test was used to investigate any significant associations between the categorical demographic variables [gender and dichotomised ethnicity (BME/non-BME)] and the test variables of PLE total severity score; number of traumas experienced; trauma total score; victimisation trauma total score; and non-victimisation trauma total score. None of these associations were found to be significant (p values >0.05).

A Spearman Rank Order correlation was used to test for any significant correlations between the demographic variable of age and the test variables of PLE total severity score; number of traumas experienced; trauma total score; victimisation trauma total score; and non-victimisation total score. None of these associations were found to be significant (r values <1, p values >0.05).

The full details of these analyses can be found in Appendix F.

3.1.2 The experience of PLEs in an adolescent inpatient sample

3.1.2.1 Prevalence

Thirty nine of the young people in the sample (84.78%) endorsed having had at least one psychotic like experience. Seven reported no PLEs. Table 3 shows the prevalence rates for each PLE and the frequency with which each was endorsed as the participant's main unusual experience (most distressing or problematic). The most common PLE endorsed was paranoia and the least common PLE endorsed was having special powers. The PLE most commonly endorsed as the main unusual experience was hearing voices; having special powers was not endorsed by any of the participants as their main unusual experience.

Table 3

Prevalence of PLEs in those participants who reported them (n=39)

Psychotic-Like Experience	Not true n (%)	Somewhat certainly true n (%)	/ Main unusual experience n (%)
1. Some people believe that their thoughts can be read. Have other people ever read your thoughts?	20 (51.28)	19 (48.72)	4 (10.26)
2. Have you ever believed that you were being sent special messages through the television?	22 (56.41)	17 (43.59)	5 (12.82)
3. Have you ever thought that you were being followed or spied upon?	5 (12.82)	34 (87.18)	8 (20.51)
4. Have you ever heard voices that other people could not hear?	12 (30.77)	27 (69.23)	11 (28.21)
5. Have you ever felt that you were under the control of some special power?	21 (53.85)	18 (46.15)	3 (7.69)
6. Have you ever known what another person was thinking even though that person wasn't speaking?	18 (46.15)	21 (53.85)	2 (5.13)
7. Have you ever felt as though your body had been changed in some way that you could not understand?	24 (61.54)	15 (38.46)	2 (5.13)
8. Do you have any special powers that other people don't have?	29 (74.36)	10 (25.64)	0 (0.00)
9. Have you ever seen something or someone that other people could not see?	14 (35.90)	25 (64.10)	4 (10.26)

3.1.1.2 PLEs v Unusual Experiences with Distress (UEDs)

Mean PLE total severity was 27.09 (SD = 25.48). Of those who had experienced PLEs, 89.74% endorsed that it had caused them some form of distress or impact. Therefore in this sample overall, 84.78% of young people had PLEs and 76.01% had UEDs. Similarly to the pattern of PLEs endorsed, paranoia and hearing voices had the highest severity scores, while having special powers had the lowest severity scores. The severity scores for the individual PLEs are shown in Table 4.

Table 4

Psychotic-like experience severity scores (n=39)

Individual Psychotic-Like Experience	Mean	Standard Deviation
Have you ever thought that you were being followed or spied upon?	5.11	4.06
Have you ever heard voices that other people could not hear?	4.96	4.66
Have you ever seen something or someone that other people could not see?	4.04	4.54
Have you ever felt that you were under the control of some special power?	2.85	4.15
Have you ever felt as though your body had been changed in some way that you could not understand?	2.52	3.90
Some people believe that their thoughts can be read. Have other people ever read your thoughts?	2.34	3.39
Have you ever known what another person was thinking even though that person wasn't speaking?	2.22	3.06
Have you ever believed that you were being sent special messages through the television?	2.02	3.22
Do you have any special powers that other people don't have?	1.07	2.48

3.1.3 The experience of traumatic events in an adolescent inpatient sample

3.1.3.1 Prevalence

Forty two of the participants (91.30%) reported that they had experienced at least one traumatic event. Thirty six of the participants (78.26%; 85.71% of the trauma subgroup, i.e. those reporting a traumatic event) had experienced more than one trauma. Table 5 shows the prevalence rates for each trauma type (in the trauma subgroup) and those endorsed as being currently the most distressing.

Thirty six of the trauma subgroup (85.71%) had experienced a victimisation trauma (i.e. being hurt physically, being hurt emotionally, being hurt sexually and/or being bullied). Despite the high levels of victimisation events in this sample, only thirteen of the participants (30.95%) endorsed a victimisation event as their most distressing trauma.

Table 5

Prevalence of traumas (n=42)

Trauma type	Trauma event	Not experienced n (%)	Happened once n (%)	Happened More Than Once n (%)	Endorsed as most distressing trauma n (%)
Victimisation Traumas	Being hurt physically	22 (52.38)	5 (11.90)	15 (35.71)	1 (2.38)
	Being hurt sexually	30 (71.42)	4 (9.52)	8 (19.05)	5 (11.90)
	Being hurt emotionally	12 (28.57)	6 (14.29)	24 (58.5)	5 (11.90)
	Being bullied	14 (33.33)	6 (14.29)	22 (52.38)	3 (7.14)
Non-victimisation Traumas	Having an illness or being very poorly/sick	21 (50.00)	6 (14.29)	15 (35.71)	2 (4.76)
	Being in a serious accident	35 (83.33)	5 (11.90)	2 (4.76)	1 (2.38)
	Being in a natural disaster	41 (97.61)	0 (0.00)	1 (2.38)	0 (0.00)
	Seeing someone else hurt or killed	27 (64.29)	7 (16.67)	8 (19.05)	4 (9.52)
Other	Contact with Mental Health Services	17 (40.48)	9 (21.43)	16 (38.10)	6 (14.29)
	Other scary experiences	21 (50.00)	2 (4.76)	19 (45.24)	8 (19.05)
Did not identify					7 (16.67)

3.1.3.1 Trauma Characteristics

The mean age of onset for the most distressing trauma endorsed was 11 years, 6 months. The majority of these traumas were still ongoing (59.52%), but if they had ended the mean age at

ending was 12 years and 4 months. Of the trauma subgroup, 40.48% were worried that they might be seriously hurt or die at the time of the trauma, 26.19% were worried that someone else might be seriously hurt or die and 66.67% felt scared, helpless or horrified at the time of the trauma. Overall, 76.19% had experienced a criterion A event, according to DSM-IV criteria (APA, 1994).

Peri-traumatic dissociation scores had a mean of 4.81 (SD = 3.81) and a range of 0 – 12 (n=42). Post-traumatic dissociation scores had a mean of 3.67 (SD = 3.60) and a range of 0–12 (n=42).

CR-IES total scores had a mean of 36.55 (SD = 19.71) and a range of 0 – 65 (n=42). The intrusions subscale had a mean of 11.71 (SD = 6.76) and a range of 0 – 20. The avoidance subscale had a mean of 10.81 (SD = 6.43) and a range of 0 – 20. The arousal subscale had a mean of 14.02 (SD = 7.93) and a range of 0 – 25.

CPTCI total scores had a mean of 63.02 (SD = 23.65) and a range of 0 – 100 (n=41). The disturbing and permanent change subscale had a mean of 30.63 (SD = 12.76) and a range of 0 – 52. The feeble person in a scary world subscale had a mean of 32.39 (SD = 12.00) and a range of 0 – 48.

For the blame appraisals (n=38), blaming the self had a mean score of 3.32 (SD = 0.90) and a range of 1 – 4; blaming others with intention had a mean score of 2.03 (SD = 1.13) and a range of 1 – 4; blaming others without intention had a mean score of 1.95 (SD = 1.01) and a range of 1 – 4; not assigning any blame had a mean score of 2.24 (SD = 1.13) and a range of 1 – 4.

3.2 Hypotheses

3.2.1 Hypothesis 1: More frequent trauma experiences will be associated with greater PLE severity

Ninety five percent of those young people with PLEs had also experienced trauma, and 88% of those reporting trauma experienced PLEs.

The relationship between trauma frequency and total PLE score was investigated using a Spearman Rank Order Correlation. There was a large positive correlation between the two variables ($r=0.42$, $n=46$, $p<0.01$), with more frequent trauma associated with greater PLE severity. This was a medium effect size and the hypothesis was supported.

3.2.1.1 Hypothesis 1b: More frequent victimisation trauma will be associated with greater PLE severity and more frequent non-victimisation trauma will not be associated with greater PLE severity

The relationship between frequency of victimisation trauma and total PLE score was investigated using a Spearman Rank Order Correlation. There was a large positive correlation between the two variables ($r=0.51$, $n=42$, $p<0.01$), with more frequent victimisation trauma associated with greater PLE severity. This was a medium effect size.

A Spearman Rank Order Correlation was used to investigate the relationship between individual victimisation trauma types and total PLE score. There were positive correlations between the total PLE score and being hurt physically ($r=0.49$, $n=42$, $p<0.01$), being hurt sexually ($r=0.42$, $n=42$, $p<0.01$) and being hurt emotionally ($r=0.31$, $n=42$, $p<0.05$). All of these correlations had a medium effect size. The correlation between being bullied and total PLE score was non-significant ($r=0.21$, $n=42$, $p>0.05$).

The relationship between frequency of non-victimisation trauma and total PLE score was investigated using a Spearman Rank Order correlation. The correlation was non-significant ($r=0.23$, $n=42$, $p>0.05$).

The hypothesis was supported.

3.2.1.2 Hypothesis 1c: More frequent sexual abuse will be associated with more severe voices/visions and more frequent physical abuse will be associated with more severe paranoia

Sexual abuse was significantly associated with visions ($r=0.39$, $n=42$, $p<0.01$) and this was a medium effect size. Sexual abuse was not significantly associated with voices ($p>0.05$). Physical abuse was significantly associated with paranoia ($r=0.43$, $n=42$, $p<0.01$) and this was a medium effect size. This hypothesis was partially supported.

As not all of the expected associations had been observed, post-hoc analyses were conducted.

A Spearman Rank Order Correlation was used to investigate the relationship between each trauma type and total PLE score and between each PLE type and trauma frequency score. See Appendix G for the table containing correlations.

In order to examine associations of these key PLEs with victimisation events more generally, a Spearman Rank Order correlation was used to investigate the relationship between the voices, visions and paranoia PLEs and experience of victimisation or non-victimisation trauma. All three PLEs were significantly related to having experienced a victimisation trauma, but not significantly related to experiencing a non-victimisation trauma (see Table 6).

Table 6

PLE type and victimisation / non-victimisation correlations (n=42)

PLE type	Victimisation Trauma	Non-Victimisation Trauma
Have you ever heard voices that other people could not hear?	$r=0.32, p<0.05$	$r=0.19, p>0.05$
Have you ever seen something or someone that other people could not see?	$r=0.40, p<0.01$	$r=0.26, p>0.05$
Have you ever thought that you were being followed or spied upon?	$r=0.43, p<0.01$	$r=0.27, p>0.05$

3.2.2 Hypothesis 2: More severe peri-traumatic dissociation and post-traumatic dissociation will be associated with greater PLE severity

The relationship between peri-traumatic dissociation and total PLE score was investigated using a Spearman Rank Order Correlation. There was a large positive correlation between the two variables ($r=0.49, n=42, p<0.01$), with higher levels of dissociation at the time of trauma associated with greater PLE severity. This was a large effect size.

The relationship between post-traumatic dissociation and total PLE score was investigated using a Spearman Rank Order Correlation. There was a large positive correlation between the two variables ($r=0.56, n=42, p<0.05$), with higher levels of dissociation following the trauma associated with greater PLE severity. This was a large effect size.

This hypothesis was supported.

3.2.3 Hypothesis 3: Higher rates of maladaptive post-traumatic appraisals will be associated with greater PLE severity

The relationship between total CPTCI score and total PLE score was investigated using a Spearman Rank Order Correlation. There was a large positive correlation between the two variables ($r=0.64$, $n=41$, $p<0.01$), with higher rates of maladaptive post-traumatic appraisals associated with high levels of PLE severity. This was a large effect size.

The relationship between the disturbing and permanent change subscale of the CPTCI and total PLE score was investigated using a Spearman Rank Order Correlation. There was a large positive correlation between the two variables ($r=0.59$, $n=41$, $p<0.01$), with a higher score on this subscale associated with greater PLE severity. This was a large effect size.

The relationship between the feeble person in a scary world subscale of the CPTCI and total PLE score was investigated using a Spearman Rank Order Correlation. There was a large positive correlation between the two variables ($r=0.56$, $n=41$, $p<0.01$), with a higher score on this subscale associated with greater PLE severity. This was a large effect size.

The relationship between total PLE score and blame scores was investigated using a Spearman Rank Order Correlation. There was a positive correlation between 'I blame others and they meant to harm me' and total PLE score ($r=0.36$, $n=38$, $p<0.05$). This was a medium effect size. The correlations between the other blame variables ('I blame myself', 'I blame other people but they didn't mean to harm me' and 'I don't blame anyone') and total PLE score were non-significant (r values < 0.20 , p values > 0.05).

This hypothesis was supported.

3.2.4 Hypothesis 4: Higher rates of PTS symptoms (intrusions, avoidance and hyperarousal) will be associated with greater PLE severity

The relationship between total CR-IES score and total PLE score was investigated using a Spearman Rank Order Correlation. There was a large positive correlation between the two variables ($r=0.57$, $n=42$, $p<0.01$), with high levels of trauma-related distress associated with greater PLE severity. This was a large effect size.

The relationship between the three subscales of the CR-IES and total PLE score was investigated using a Spearman Rank Order Correlation. There was a large positive correlation between the intrusion score and total PLE score ($r=0.48$, $n=42$, $p<0.01$), the

avoidance score and total PLE score ($r=0.25$, $n=42$, $p<0.01$) and the arousal score and total PLE score ($r=0.59$, $n=42$, $p<0.01$). Greater PLE severity was associated with higher levels of intrusions (medium effect size), avoidance (large effect size) and hyperarousal (large effect size).

This hypothesis was supported.

3.3 Regression Analysis to investigate psychological routes from trauma to PLEs

In order to explore the relative contributions of trauma-related variables to PLE severity, a post-hoc linear regression analysis was conducted ($n=46$), with PLE severity as the dependent variable and trauma frequency, dissociation, appraisals and post-traumatic stress (PTS) symptoms as predictors.

The models reported were not affected by collinearity between the variables. Tolerance values were all >0.1 and VIF values were all <10 .

Table 7 contains the predictors that were included in the model and their significance values.

Table 7

Predictors included in regression analysis

Predictor	Significance
Trauma frequency	$\beta = 0.39$, $p > 0.05$
Peri-traumatic dissociation	$\beta = 0.09$, $p > 0.05$
Post-traumatic dissociation	$\beta = 0.16$, $p > 0.05$
CPTCI disturbing and permanent change	$\beta = 0.12$, $p > 0.05$
CPTCI feeble person in a scary world	$\beta = 0.11$, $p > 0.05$
I blame other people and they meant to harm me	$\beta = 0.02$, $p > 0.05$
CR-IES intrusion	$\beta = 0.26$, $p > 0.05$
CR-IES avoidance	$\beta = 0.26$, $p > 0.05$
CR-IES arousal	$\beta = 0.17$, $p > 0.05$

The model was found to account for 29.50% of the variance in PLE severity and was significant ($F_{(9)}=3.09$, $p<0.05$). None of the predictor variables made a significant, unique contribution (β values all < 0.4 ; p values all > 0.05).

A backward elimination regression analysis was conducted to confirm which of the variables in Table 7 had the most predictive value. The final model contained the CR-IES avoidance score and trauma frequency. This model explained 36.70% of the variance and was significant ($F_{(2)}=14.05$, $p<0.05$). Trauma frequency made a significant, unique contribution to the PLE total score ($\beta=0.46$, $p<0.005$).

4 Discussion

4.0 Summary of study and results

This study examined the prevalence of, and relationships between, trauma and psychotic-like experiences (PLEs) in an adolescent inpatient sample, as well as the associations between trauma-related psychological processes (dissociation, post-traumatic appraisals and post-traumatic stress (PTS) symptoms) and PLEs. This study is the first to examine these relationships in adolescents, and aimed to establish whether the psychological processes implicated in theoretical models of PTS in psychosis play a role in PLEs, consistent with findings in the adult literature. Rates of both traumatic events and PLEs were very high; most participants had experienced both. Trauma frequency (particularly victimisation trauma frequency) was related to PLE severity, with evidence of associations between trauma-related dissociation, post-traumatic appraisals, PTS symptoms and PLEs. This suggests that these psychological mechanisms (i.e. affect regulation strategies, information processing and intrusive memories, and appraisals) play a role in PLEs and could be targeted in mechanism-specific psychological interventions to reduce distress and the likelihood of transition to more severe mental health difficulties.

4.1 Key Findings

4.1.1 Characteristics of the sample

4.1.1.1 Demographics

The sample in this study was reflective of the composition of CAMHS inpatient services in the UK (Royal College of Psychiatrists, 2014). Although the two inpatient wards in this study are specialist services, the majority of the admissions come from the local population and the rates of female gender and White British ethnicity were higher in this sample than those found locally (Office for National Statistics, 2012).

The preponderance of older adolescents in the sample was reflective of overall UK adolescent inpatient admissions; the picture of previous admissions reflected that the majority of adolescent inpatients generally have had previous inpatient admissions (Royal College of Psychiatrists, 2014). In terms of presenting problem, the sample mirrored the adolescent inpatient population generally in that mood disorders were the most frequent diagnosis at admission. However, the proportion of mood disorders in this sample was slightly lower, and the proportion of psychotic disorder slightly higher, than in the UK wide statistics, again in keeping with higher local prevalence rates (Kirkbride et al., 2010). A

higher number of young people in this sample, compared to national averages, had a parent with their own mental health difficulty (Royal College of Psychiatrists, 2014).

4.1.1.2 Prevalence of trauma and PLEs

The prevalence of PLEs in this study was much higher than in large-scale community adolescent samples (Kelleher et al., 2012; Laurens et al., 2012). The high prevalence of PLEs in the inpatient sample cannot simply be accounted for by diagnosis, as only 20% of the sample had been given a diagnosis of psychosis. The findings suggest that PLEs and Unusual Experiences with Distress (UEDs) are the norm in inpatient settings, rather than the exception, and that they should be routinely screened for in such populations.

A large majority of this sample also reported that they had experienced a trauma; most of the young people had in fact experienced more than one trauma. The rates of trauma were higher than in large scale community adolescent samples (Copeland et al., 2007; Finkelhor et al., 2013; Radford et al., 2013), but similar to the rates reported in adulthood in a community sample in the USA (Kilpatrick et al., 2013). This study further supports the assertion that trauma is a common experience for young people and extends it by suggesting that trauma is more common in inpatient adolescent settings than the general population. It would appear beneficial to ask young people about traumatic experiences in order to both provide support and consider any issues in the environment they will be returning to after discharge that may affect their recovery. This is an important issue, as 40% of the most distressing traumas for this group were still ongoing.

The range of traumas that participants were asked about appeared to be reflective of the experiences of young people as all of the traumas on the trauma checklist were endorsed. Both victimisation and non-victimisation traumas were highly prevalent in this sample. Studies of trauma and psychosis have tended to focus on victimisation traumas, particularly childhood abuse. Interestingly, young people in this sample were more likely to endorse a non-victimisation trauma as their most distressing experience, suggesting that only asking about victimisation traumas may be excluding some of the experiences that are meaningful to young people. However, it is also possible that non-victimisation traumas may be easier for young people to disclose and acknowledge that they have been affected by, especially for those young people who may not have the opportunity to manage relationships with perpetrators of victimisation traumas in the same way that adults may be able to.

4.1.2 Trauma and PLE severity.

The medium sized association between trauma frequency and PLE severity is in line with previous research suggesting that increased frequency of trauma leads to increased severity

of psychotic symptoms in both clinical and non-clinical samples (van Nierop et al., 2013), with the experience of trauma having a significant, cumulative, dose response relationship with later PLEs. This has been found in both large scale, community child studies (Arseneault et al., 2011) and large scale, community adult studies (Shevlin et al., 2008). This is the first time that such a relationship has been investigated, and demonstrated, in an adolescent inpatient sample.

The finding that it is the victimisation element of trauma that is particularly important is reflective of the existing literature that has found strong associations between abusive experiences in childhood and later PLEs (Shevlin et al., 2008) and a particularly high prevalence of victimisation traumas in individuals with severe mental illness (Grubaugh et al., 2011). This is of relevance for early intervention and mental health promotion programmes, as one in four young people have reported experiencing some form of abusive experience in childhood (Radford et al., 2013).

A relationship was not found between bullying and PLEs. Although a relationship is being established in the trauma literature between the experience of bullying and later PTSD (Matthiesen & Einarsen, 2004), the relationship between bullying and PLEs has been less consistent. Some studies have found an association between PLEs and being bullied (Campbell & Morrison, 2007) and between PLEs and being a bully (Kelleher et al., 2008). However, other studies have not found an association between PLEs and bullying (Bentall et al., 2012). It is not clear why an association has not been consistently found, but it may be that the category of bullying lacks specificity as it is such a prevalent issue in society and encompasses a broad range of harmful behaviour. Improved assessment of bullying may help to clarify which aspects, if any, are pertinent to PLE severity.

The victimisation trauma categories of sexual and physical abuse and their relationship with particular PLEs were examined closely, to investigate whether the specific relationships identified in adults were replicated in the study sample. Findings indicated a significant association between the experiences of sexual abuse and visions, but only a small, non-significant association between the experience of sexual abuse and voices. The existing literature has suggested an association between the experience of sexual abuse and both voices and visions (e.g. Varese et al., 2012) and the sample size of the current study was underpowered to infer a reliable absence of any association. The finding of a significant association between the experience of physical abuse and paranoia is consistent with the existing literature (e.g. Bentall et al., 2012).

4.1.3 Understanding routes between trauma and PLEs

This study was cross-sectional and so inferences about causality cannot be drawn. However, the study was designed to examine trauma-related factors that have been posited to be key mechanisms in the relationship between trauma and psychosis. The findings indicate that trauma-related affect-regulation processes, information processing and intrusive memories, and appraisals are all associated with PLE severity, and therefore may play a role in their development and maintenance.

4.1.3.1 Affect Regulation

This study found a large association between both peri-traumatic and post-traumatic dissociation and PLE severity. This finding is consistent with the existing literature suggesting that dissociation mediates the relationship between childhood abuse and later PLEs (Varese et al., 2012).

Dissociation has been suggested to be a useful coping strategy in the short-term, as the individual is protected from potentially overwhelming, negative emotions and feelings of powerlessness created by the traumatic experience (Romme & Escher, 2006). However, in the long term, dissociation as a coping strategy becomes maladaptive, as it prevents trauma memories and negative thoughts and emotions from being processed and contextualised. Dissociation also leads to disruptions in sensory perceptual processing in the Hypothalamic-Pituitary-Adrenal system, so increasing the likelihood of PLEs (Read et al., 2005).

Large associations were found between the PTS symptoms of avoidance and arousal and PLE severity. The importance of post-traumatic arousal reflects the existing literature showing that increased arousal imparts a worse prognosis for the course of psychosis due to the influence on the individual's inability to correctly assess threat. This leads to the risk of further traumatisation (Larkin & Morrison, 2006).

Avoidance of thoughts and reminders of the trauma leads to safety behaviours so that the memory of the trauma remains confused and retains a sense of current threat (Ehlers & Clark, 2000), increasing the likelihood of future anomalous experiences also being interpreted as threatening. Avoidance is a symptom criterion for PTSD (APA, 2013), but is also posited as a maintaining factor in cognitive models of psychosis (Garety et al., 2001). Similarly, arousal and negative cognitions/mood are symptom criteria for PTSD (APA, 2013). Arousal levels have been found to be altered in individuals with psychosis (Kimhy et al., 2009) and those with psychosis also experience negative cognitions and distress (Kilcommons & Morrison, 2005).

4.1.3.2 Information processing and intrusive memories

Larkin and Morrison (2006) posited that beliefs about the self, world and others develop following life experiences, including experiences of trauma. Such beliefs include beliefs about PLEs, dissociation and other information-processing strategies that have been used to understand and cope with the life experiences. The beliefs that have developed will affect the appraisals that the individual uses. For example, trauma sequelae interpreted as linked to the trauma will be viewed as an expression of PTSD, while trauma sequelae interpreted in a culturally unacceptable manner will be viewed as psychotic. These appraisals then lead to physiological arousal and emotional distress and so vicious cycles are formed, maintaining the difficult experiences and their culturally unacceptable misinterpretations (Larkin & Morrison, 2006).

A medium sized association was found between the post-traumatic stress (PTS) symptom of intrusions and PLE severity. This finding is consistent with the existing literature that proposes shared processes between trauma sequelae and PLEs, for example that they both have an intrusive quality, with the content of the trauma providing the content of the subsequent PLE (Holmes & Steel, 2004). This is also consistent with the shared processes present in the explications of both PTSD (Brewin, 2001) and psychosis (Hemsley, 2004), with both affected by disruptions to information processing symptoms. The unprocessed nature of the trauma memory affects retrieval so that voluntary recall is difficult, whilst involuntary recall is heightened. Decontextualised and fragmented trauma memories may manifest later as PLEs (Holmes & Steel, 2004).

4.1.3.3 Appraisals

A large association was found between scores on the Child Post-Traumatic Cognitions Inventory (CPTCI) and PLE severity. This was true of total CPTCI scores and the two subscales of ‘disturbing and permanent change’ and ‘feeble person in a scary world’. Both trauma and PLEs are posited to lead to distress when they are appraised as dangerous to the individual and coming from an external source (Larkin & Morrison, 2006). Negative appraisals of a sense of ongoing vulnerability to imminent harm have been shown to be predictive of distress responses to trauma, which become enduring when the individual perceives a permanent change in themselves and their world (Salmon et al, 2007). An appraisal of the trauma as having caused a negative change to the self and a negative perception of the world may make the individual more likely to appraise an anomalous experience as negative and threatening and therefore to experience it as a PLE.

Blaming others for the trauma experienced and believing that those people intended to cause harm led to greater PLE severity. While self-blame has been identified as maladaptive more generally in PTSD, in this study the concept of other blame (with intention to harm) was also considered as it appeared likely to be particularly pertinent to the development of PLEs. The finding of an association between other blame and PLEs adds to the literature by suggesting that an external appraisal alone is not sufficient for distress to arise; rather the appraisal also needs to be characterised by a sense that there is an intention to cause harm to the individual.

4.2 The route from the experience of trauma to later PLEs

It appears reasonable to suggest that trauma-related psychological processes influence PLE development and severity according to the way that they are interpreted by the individual. Intrusions that bear an obvious resemblance to the trauma will be considered as indicative of PTSD, whilst those that are more ambiguous (due to distortions by affect regulation, trauma memory and appraisal processes) are interpreted as anomalous and external and lead to PLEs (Garety et al., 2001). This study supports the model proposed by Mueser et al., (2002) where PTS symptoms directly influence the later experience of psychosis.

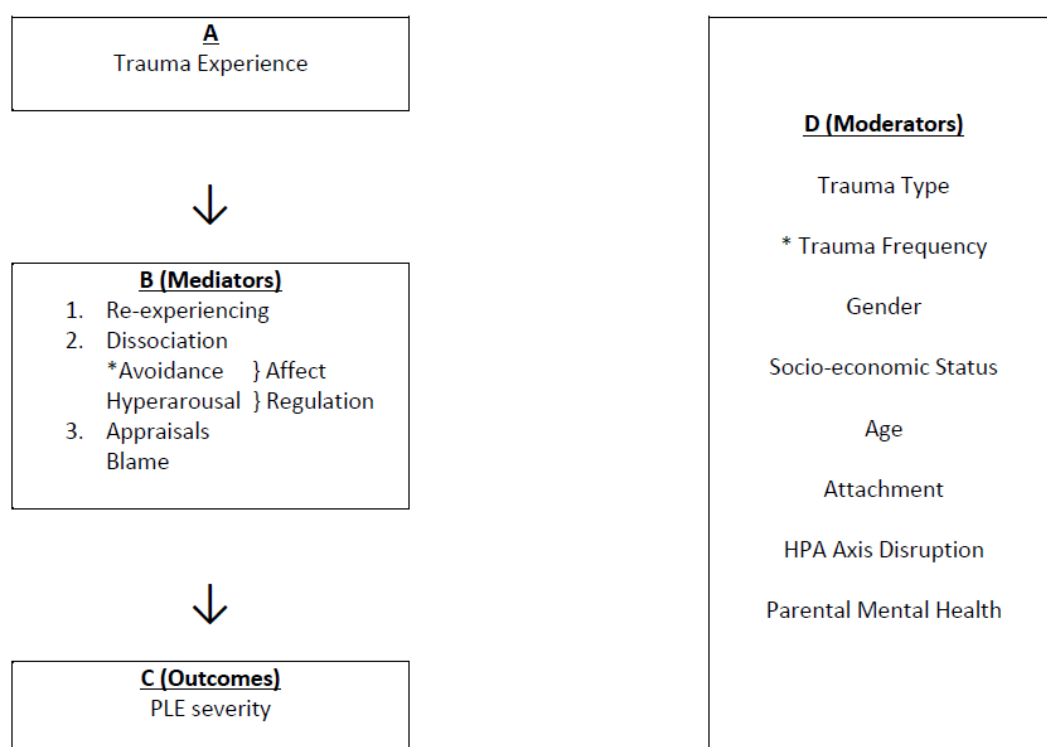
The findings from this study suggest that there are a number of factors contributing to the association between trauma and PLEs. These have been considered above in terms of the chronology of the trauma sequelae. Initially, the trauma frequency influences its potency to contribute to PLEs, particularly for victimisation traumas. Dissociation, either at the time of or after the trauma, also influences the experience and severity of PLEs, as do the appraisals given to the trauma (in terms of self-view, world-view and allocation of blame) and the PTS symptoms of intrusions, avoidance and arousal that result. These findings will require replication in larger, prospective studies.

A regression analysis found that combining these psychological processes accounted for approximately one third of the variance in PLE severity. The only variable that was able to provide a significant, unique contribution was trauma frequency, suggesting that the assessment of trauma-related psychological processes did not sufficiently reflect the traumatic reactions that determine the impact of trauma on later PLEs. However, of the psychological processes posited to play a causal role, the PTS symptom of avoidance was the other predictor in the final model, although this did not reach significance. Experiential avoidance, or the avoidance of difficult thoughts and emotions, has been posited to play a central role in the development and maintenance of mental health difficulties. It is discussed in all the major psychological therapeutic orientations including Psychodynamic (Freud, 1966), Behavioural (Craighead, Craighead & Ilardi, 1995) and Cognitive (Beck, 1976). It

also has a central role in the newer, ‘third-wave’ therapy approaches such as Dialectical Behaviour Therapy (Linehan and Dimeff, 2001) and Acceptance and Commitment Therapy (Hayes, Strosahl & Wilson, 2003). The PTS category of avoidance includes numbing symptoms (i.e. dissociative detachment) as well as behavioural avoidance (APA, 2013) and so this finding is consistent with an affect regulation (possibly dissociative) route between trauma and PLEs.

As explained in the cognitive models of psychosis and trauma outlined in the introduction, it seems likely that the psychological factors investigated in this study account for the relationship between the experience of trauma and later PLEs. It also seems feasible that trauma type and trauma frequency may moderate the strength of the relationship between the two. A framework outlining this relationship can be seen in figure 2.

Figure 2 The role of mediators and moderators



* Factors that were significant in the final model (although likely to be underpowered)

4.3 Limitations of the Research

The current study had a number of limitations. Firstly, it was not possible to make contact with all of the young people identified as eligible to take part during the recruitment period

for this study. We were not able to speak to some of the carers to get permission and some young people had a very short admission and so had been discharged before we were able to speak to them. There were also some young people that the ward team did not feel it would be appropriate to approach for the study, for example due to queries over their capacity to fully understand what it meant to consent to the study, or their current mental state. One young person who initially assented to take part then withdrew their assent. A strength of this study was that all admissions were eligible to take part, but it may be that some young people with more severely unwell presentations (and perhaps particularly psychotic presentations) were considered too unwell to take part in the study, and therefore unrepresented.

The second limitation involves the study design. The study comprised a small sample size and this affects the precision of the study and the ability to generalise the findings to the wider population. The regression was underpowered to detect significant predictor variables in this sample and also contained a large number of independent variables. In general, it is advisable to have a minimum of 50 participants when conducting a regression analysis (van Voorhis & Morgan, 2007), with the number of participants needed increasing as the number of independent variables increases. Green (1991) suggests using the formula $N > 50 + 8m$ in order to determine the minimum number of participants needed to test the multiple correlation, where m is the number of independent variables. Larger sample sizes still would be needed if the dependent variable is not normally distributed, if the effect size is likely to be small and if the regression will be conducted in a stepwise manner (Tabachnick & Fidell, 1996). As such, the findings of the study must be interpreted with caution and used as a guide for future research in this area. Conducting a further regression analysis should only be considered with a much larger sample size. The effect sizes found in this study could then be used to inform a power calculation for future regression analyses.

The analysis used in this study was cross-sectional and, while this can suggest that there is a relationship between two variables, it cannot show that one variable has caused the change in the other variable. Although this study suggests that the trauma sequelae studied may influence PLE severity, it is possible that there are other variables which correlate with both the independent and dependent variables and are confounding the results. In this study it is not possible to say definitively that the trauma occurred prior to any experience of PLEs and it may have been helpful to date the occurrence of both trauma and PLEs in order to clarify this. However, in order to demonstrate causality, studies need to use a prospective design so that the temporal order can be clearly established and not affected by the memory biases

often present in retrospective reporting (Varese et al., 2012). The cross-sectional design of this study also meant that some of the traumas were ongoing, which also affects establishment of a causal route from initial trauma, through trauma-related psychological process, to later PLEs.

The third limitation involves the measures used. The PLE scale used was validated in a community sample rather than an inpatient sample, although there is no reason to believe that it would not be valid in inpatient adolescents. As already described, in the trauma checklist two of the traumas were ambiguous and so it was not possible to include them in the victimisation/non-victimisation analyses. It would be helpful to have heard from the young people about their interpretations of what endorsing these traumas meant. The items could have been more clearly defined, or have included a qualitative section where young people who felt comfortable to disclose could elucidate what these traumas meant to them. It may also have been helpful to include a diagnostic measure for PTSD in order to ascertain if PLE-related distress is something qualitatively different to PTSD and to be able to investigate the validity of a PTS assessment in the presence of other psychopathology.

Questions about dissociation were deliberately kept short in order to maintain the young people's engagement with the questionnaire pack, but also obtain a measure of the young people's dissociative experiences. However, it was possible that the items asking about dissociation since the trauma were just measuring general dissociation, which is known to correlate with PLEs. As peri-traumatic dissociation had a smaller association with PLEs than post-traumatic dissociation in this study, it may be that the post-traumatic dissociation score was a composite measure of both scores.

Finally, this study utilised a self-report design and so there was no corroboration of events and/or symptoms from carers or staff. However, there was no reason to suppose that there would have been any motivation for the participants to either fabricate or downplay their responses.

4.4 Implications

The findings in this study have implications for understanding the prevalence of trauma and PLEs in an adolescent inpatient sample and considering the potential routes that lead from one to the other. There are also wider implications in terms of diagnostic categories, with a joint trauma-psychosis diagnosis posited to provide greater provision and availability of services and more effective evaluation of treatment (Kingdon, Hansen & Turkington, 2010).

The results of the study suggest that both trauma and PLEs are more prevalent in the adolescent inpatient sample than in community samples and adult samples. It would be clinically useful for both trauma and PLEs to be routinely enquired about when young people are admitted to hospital, as young people may only endorse these experiences if directly asked, particularly if their primary reason for admission has not centred around a traumatic experience or concerns regarding psychosis. This would allow clinical teams and CAMHS services a wider understanding of both the young people in their care and how best to organise service provision. It would also allow clinical teams to ascertain what kind of treatments would be most beneficial for the young person and also to complete a comprehensive risk assessment.

It appears that there are a number of psychological processes linking the experience of trauma with PLEs and PLE severity. Understanding these links will support the development of mechanism-specific psychological interventions, which can be used to support young people. A comprehensive assessment will ensure that the relevant interventions are utilised with young people and that these interventions have modules including support with trauma processing, dissociation, maladaptive appraisals and PTS symptoms which can be applied flexibly depending on which are causing the individual distress. This study suggests that targeting avoidance as a key process will be an important foundation for these interventions to be built upon.

The findings, in the context of the wider literature, also suggest that there is a wider societal issue in protecting young people from experiencing traumas, particularly victimisation traumas, and also safeguarding children and young people from remaining in traumatic environments. Understanding more about the kinds of traumas that young people are experiencing allows health, social care and community services to consider how best to support families and understand risk markers for young people and families at risk. It can also inform public education campaigns, for example around bullying in schools. Adequate safeguarding procedures that prevent young people from experiencing further traumas as well as support for those at ultra high risk of converting to psychosis are important as there is increased risk of more chronic difficulties if either of these are persistent. Ensuring that services are designed to reduce fear and traumatisation is crucial in preventing service contact from being experienced as traumatic and so becoming a risk factor for additional distress.

It has been suggested that it is better for clients to be given a diagnosis of PTSD than psychosis so that they are more likely to receive talking treatments rather than medication,

whereas it is more helpful for our understanding of these issues to think of a spectrum of reactions to traumatic experiences, with a distinct route involving trauma-induced psychosis (Read et al., 2006). This study supports the assertion that the boundaries between the disorders of PTSD and psychosis may be somewhat artificial, with the prodromal phases of psychosis and affective disorders only distinguishable once PLEs develop (Marwaha, Broome, Bebbington, Kuipers & Freeman, 2013). The distress that the individual experiences will occur irrespective of whether they are given a diagnosis of PTSD or psychosis. It would appear helpful to complete an individual, transdiagnostic formulation with young people and to adopt a symptom-focussed approach to treatment, targeting the mechanisms that are maintaining distress. Independent of diagnosis, there may be distress maintenance cycles regarding PTS symptoms, PLEs and shared processes. It will be important to ascertain the meaning that the young person has given to their experiences.

4.5 Future Research

Findings support the design of a larger prospective study to investigate mediation over time, in a more representative sample. In a small sample it is difficult to achieve full representation of all local groups and a larger sample size would allow exploration of any potential confounding effects of gender, age and ethnicity. This larger prospective design would also allow consideration of the temporal order of trauma experiences and development of PLEs and to begin to test out treatments, as described below.

4.5.1 Investigating causality in the route between the experience of trauma and PLEs

It would be helpful for future research to elucidate further how the factors investigated in this study are mediating / moderating the relationship between the experience of trauma and later PLEs. The analysis in this thesis is novel, as trauma-related psychological variables have not been examined previously. Now that preliminary analyses have established the association between trauma and PLEs, future research should conduct a full mediation and moderation analysis to establish causal mechanisms (Baron & Kenny, 1986).

4.5.2 Post-Psychosis Post-Traumatic Stress Disorder (PPPTSD)

It is of note that some studies have posited the existence of PPPTSD, where it is the psychosis itself that is experienced as traumatic, leading to a traumatic stress reaction (Larkin and Morrison, 2006). Williams-Keeler, Millikin & Jones (1994) found psychosis to be a precipitant of PTSD in a similar way to combat trauma and Read et al (2005) suggested that negative symptoms (anhedonia, loss of motivation etc.) may be a reaction to the trauma of psychosis and hospitalisation. Tarrier, Khan, Cater and Picken (2007) found that 80% of a first episode psychosis group felt that they had been traumatised by their treatment (38% meeting criteria for PTSD). For this group, there was a significant association between symptomatic PTSD and involuntary hospitalisation, rather than the psychotic episode itself. It maybe that childhood trauma is also implicated in the PPPTSD route, with the childhood trauma conferring a vulnerability which prevents full recovery from the later experience of PLEs and/or psychosis (Bendall, Alvarez-Jimenez, Hulbert, McGorry, & Jackson, 2012).

It was not possible to investigate this association in the current study due to its cross-sectional nature and that fact that specific dates were not given for the onset of traumas and PLEs. However, it is important to be mindful of the potential for services to provoke extreme fear and helplessness. This will support the continued development of services that promote recovery, rather than reinforcing the route of continued distress.

4.5.3 Treatment Interventions

Although the literature regarding the common route between trauma and psychosis is growing, there remains little in regard to how to intervene effectively in a way that will encompass both trauma and psychosis symptoms, particularly for young people. Most of what has been written concerns interventions with adults. Bendall, Jackson, Hulbert and McGorry (2011) suggested that those with psychosis and a history of childhood trauma may have poorer treatment outcomes than those without trauma, with the lack of appropriate treatment contributing to people not engaging with the treatment they are given and so not achieving recovery. The authors also suggest that clinicians may be fearful of asking about, and addressing, trauma. Research in this area is vital to empower clinicians who can then empower their clients.

Childhood trauma has been suggested to be the diathesis in the diathesis-stress relationship leading to later psychosis and so all those diagnosed with psychosis need to have an assessment of their experience of trauma (Read & Ross, 2003). Treating psychosis (or PTSD) alone does not always relieve the distress that individuals are facing (Bernard et al., 2010). However, as trauma has traditionally been seen on the stress side of the relationship,

with the diathesis assumed to be biogenetic, then the appropriate psychological treatment has often been lacking (Read and Ross, 2003).

It would be helpful to conduct a small case series to see if it is feasible to provide a brief, interactive cognitive behavioural package for young people experiencing distressing PLEs and trauma sequelae, which will address the mechanisms highlighted above. The package could provide normalising and accessible psychoeducation about trauma and PLEs, together with strategies focused on cognitive (appraisal and management of intrusions), affective (emotional regulation) and behavioural (stimulus discrimination and graded exposure to reduce avoidance of day to day activities) difficulties. The strategies offered would depend on the specific pattern of difficulties reported by young people, and their preference. It would differ from routine therapy in that it would be brief, focused and specifically targeted.

4.6 Conclusion

This study utilises direct, contemporary child report. It extends the adult literature to show that the experience of trauma confers an environmental and social vulnerability to the later experience of PLEs in adolescents. Trauma and PLEs are highly prevalent in the adolescent inpatient population and may be causing significant levels of distress. There are a number of psychological mechanisms that may influence the route from one to another and these include the nature of the traumas experienced, dissociation at the time of the trauma and since, maladaptive appraisals and PTS symptoms. Targeting these mechanisms following a comprehensive assessment and individualised formulation has the potential to reduce the young person's distress. It appears that taking a transdiagnostic, symptom focussed approach would be more beneficial than using a diagnostic-led approach to treatment.

5 References

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Appendix A1: NRES Ethical Approval



NRES Committee London - Brent

80 London Road
Skipton House
London
SE1 6LH
Tel: 02079722551

10 May 2013

Dr Suzanne Jolley
Research Clinical Psychologist
Institute of Psychiatry, King's College London
PO77 Department of Psychology
Institute of Psychiatry, King's College London
Denmark Hill
SE5 8AF

Dear Dr Jolley

Study title: Investigation into the effects of trauma in adolescent inpatients with psychosis or psychotic-like experiences exploring their emotion regulation and how to intervene in the trauma-psychosis pathway.

REC reference: 12/LO/1984

Amendment number: Amendment 1 02/04/13

Amendment date: 06 April 2013

IRAS project ID: 107799

The above amendment was reviewed by the Sub-Committee in correspondence.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
trauma screening checklist	1	18 March 2013
trauma measures preamble	1	18 March 2013
Questionnaire: Adolescent dissociative experiences scale		
Questionnaire: The peri and post trauma dissociation scale	1	18 March 2013
Burt reading task		
probabilistic reasoning task (Garety et al., 2005, adapted 85:15 and		

60:40 versions)		
Trauma event appraisals	1	18 March 2013
Protocol	3	18 March 2013
logo with organisational headers and footer	1	18 March 2013
unusual experiences appraisals	2	17 February 2013
Covering letter parent/carer	1	18 March 2013
Participant Consent Form	3	02 April 2013
Participant Information Sheet: Parents/carers	4	02 April 2013
Participant Information Sheet: Young people	3	02 April 2013
Investigator CV	Emma Saddleton	
Paper illustrating use of Adolescent Dissociative Experiences Questionnaire - Armstrong et al 1997		
Assent form	3	02 April 2013
Notice of Substantial Amendment (non-CTIMPs)	Amendment 1 02/04/13	06 April 2013

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

12/LQ/1984:	Please quote this number on all correspondence
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Yours sincerely



Dr John Keen
Chair

E-mail: NRESCommittee.London-Brent@nhs.net

Enclosures: *List of names and professions of members who took part in the review*

Copy to: *Ms Jennifer Liebscher*

NRES Committee London – Brent
Attendance at Sub-Committee held in correspondence

<i>Name</i>	<i>Profession</i>	<i>Capacity</i>
Dr John Keen	General Practitioner	Expert
Mr Adeyemi Olagbegi	Clinical Pharmacology Study Data Manager	Lay

Appendix A2: R&D Ethical Approval

**Institute of
Psychiatry**

at The Maudsley

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KING'S
College
LONDON
Founded 1829

Dr Suzanne Jolley
PO77
Institute of Psychiatry
King's College London
Denmark Hill
London
SE5 8AF

13 May 2013

Dear Dr Jolley

Trust Approval: R&D2013/038 Title: Investigation into the effects of trauma in adolescent inpatients with psychosis or psychotic-like experiences exploring their emotion regulation and how to intervene in the trauma-psychosis pathway

I am writing to confirm approval for the above research project at South London and Maudsley NHS Foundation Trust. This approval relates to work in the Child and Adolescent Mental Health Services CAG and to the specific protocol and informed consent procedures described in your R&D Form. Any deviation from this document will be deemed to invalidate this approval. Your approval number has been quoted above and should be used at all times when contacting this office about this project.

Amendments, including extending to other Trust directorates will require further approval from this Trust and where appropriate the relevant Research Ethics Committee. Amendments should be submitted to this R&D Office by completion of an R&D Amendment form together with any supporting documents. A copy of this is attached ([R and D Amendment Form V3.doc](#)), but is also available on the R&D Office website.

[King's College London - Research and development approval](#)

I can confirm that King's College London will be taking on the role of Sponsor for this study.

Approval is provided on the basis that you agree to adhere to the Department of Health's Research Governance requirements including:

- Ethical approval must be in place prior to the commencement of this project.
- As Chief Investigator and/or Principal Investigator for this study you have familiarised yourself with, and accept the responsibilities commensurate with this position, as outlined in the Research Governance Framework

South London and Maudsley 
NHS Foundation Trust

http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4122427.pdf.

- Compliance with all policies and procedures of the Trust which relate to research, and with all relevant requirements of the Research Governance Framework. In particular the Trust Confidentiality Policy.
<http://www.slam.nhs.uk/media/107386/confidentiality%20policy.pdf>
- Co-operating with the Trust R&D Office's regular monitoring and auditing of all approved research projects as required by the research governance framework, including complying with ad hoc requests for information.
- Informing the Trust's Health and Safety Coordinators and/or the Complaints Department or of any adverse events or complaints, from participants recruited from within this Trust, which occurs in relation to this study in line with Trust policies. Contact details are available from the R&D Office if required.
- Sending a copy of any reports or publications which result from this study to the Trust Departments involved in the study if requested.
- Honorary Contracts must be in place prior to patient contact for all relevant members of the research team. Advice on this will be provided by the R&D Office at the point of obtaining R&D approval and on an ongoing basis for new members of staff joining the research team.
- Sending a copy of the annual reports and end of project notification submitted to ethics.

Failure to abide by the above requirements may result in the withdrawal of the Trust's approval for this research.

If you wish to discuss any aspect of this research approval with the R&D Office, please contact Jenny Liebscher jennifer.liebscher@kcl.ac.uk in the first instance.

I wish you every success with this study.

Yours sincerely



Adriana Fanigliulo
Research Governance Facilitator
SLaM/IoP R&D Office

Enc. R&D Approval Amendment Form

Appendix A3: CAG Ethical Approval

SLaM CAMHS Research Practice Approval Application Form
To be completed by principal researcher and approved by the CAMHS
research approval committee



Title of research project	Inpatient Stay Improvement Study (ISIS)
Main researcher <i>(Name, profession, place of work or study)</i>	Dr. Anca Alba and Miss Rosanna Philpott, DCLinPsy trainees at the IoP
Other researchers <i>(Name, profession, place of work or study)</i>	Jonathan Bradley, DCLinPsy trainee at the IoP
Department, area, or clinical setting where the research will take place	SLaM CAMHS adolescent inpatient units (Snowsfield, Bethlem Adolescent Unit and Woodland House)
When will the research be taking place? <i>(specify dates and duration)</i>	January 2013 to May 2014
The main purpose of the research <i>(please state briefly the hypothesis or area of concern that is being examined, and the importance for CAMHS)</i>	<ol style="list-style-type: none"> 1. To establish the prevalence of psychotic-like experiences (PLEs) in an inpatient adolescent group, and the associations between PLEs, appraisals, trauma, emotional problems and Emotional Regulation (ER) over time 2. To clarify the psychological processes influencing PLE severity <p>The longer term aim is to develop targeted, protocol driven interventions which can precede or complement the complex, multi-target high intensity therapies delivered in the inpatient setting.</p>
Does the research form part of an academic programme? <i>(please specify)</i>	Yes – DCLinPsy programme at the IoP
If so, who is the Academic Supervisor?	Dr. Suzanne Jolley, Dr. Sophie Browning and Dr. Amy Hardy from IoP / SLaM
Has the research received ethical approval?	The research was proposed at the Brent REC on 17/12/12 and we are awaiting feedback.
Has the research received local R&D approval?	The research has been submitted for R&D approval.

SLaM CAMHS Research Practice Approval Application Form
To be completed by principal researcher and approved by the CAMHS
research approval committee

Overall method of the research	<p>For the first stage of the research, 60-100 young people will be recruited for the study and asked to fill out a number of questionnaires.</p> <p>For the second stage, we will use this information to start to plan and to pilot targeted interventions, beginning with brief psychoeducation about PLEs and trauma and some coping strategies.</p>
Data collection method <i>(including the plan for obtaining input from Service Users at either the design, implementation, or outcome stage of the research)</i>	<p>Participants will complete a battery of measures to assess PLEs and appraisals, trauma and trauma sequelae, ER, mood, and overall functioning, shortly after admission and just before discharge. The measures are self-report, and will take approximately 45 minutes to complete. The researcher will be available to support the participants to complete the measures if this is helpful. (The questionnaires can be found in Appendix 1 of the Research Protocol). The test battery will be piloted with a small number of Service Users in order to get their feedback on the acceptability of the measures and the amount of time needed to complete them. All those who take part will be given a £5 voucher as a 'Thank-you'</p>
What is the expected impact on the sample / subjects of the research?	<p>The study has been designed to be helpful and informative for young people and should not be distressing, risky or onerous for participants. Talking about experiences with a trained and empathic individual can also be beneficial for participants. Researchers will maintain close contact with ward staff and will feedback any concerns about any of the young people talking part.</p>
<i>Please attach any additional documents, such as concise research proposals, methodology outline etc, which will help the decision about practice approval</i>	
Approved by (On behalf of the CAMHS Research committee)	M Buxton
Date	19/02/13

Appendix B: Parents/Carer Information Sheet

**Institute of
Psychiatry**

at The Maudsley

South London and Maudsley NHS Foundation Trust



ISIS

Inpatient Stay Improvement Study

Dr. Suzanne Jolley
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KING'S
College
LONDON

Information Sheet for Parents/Carers Version 4 – 02/04/13

ISIS Study: Inpatient Stay Improvement Study

We are inviting you and your child to take part in a research project.

You should only take part if you want to.

If you do not want to take part, this will not affect the usual care or services that you or your child receive in any way.

Before you decide whether you want to take part, it is important for you to understand why the research is being done and what it will involve.

Please take time to read the following information carefully.

One of our team will go through the information sheet with you and answer any questions you have. This should take about 15 minutes.

Talk to other people about the project if you want to.

- Part 1 tells you the purpose of this project and what will happen to you if you take part.
- Part 2 gives you more detailed information about how the project will be carried out.

Please ask us if there is anything that is not clear or if you would like more information.

Contact details: Anca Alba and Rosanna Philpott - 0207 848 0223/4

REC Reference Number: 12/LO/1984

You will be given a copy of this information sheet

The Inpatient Stay Improvement Study (ISIS) has ethical approval from the London Brent Research Ethics Committee (Ref. 12/LO/1984). Researchers are Anca Alba, Rosanna Philpott and Jonathan Bradley, Clinical Psychologists in Training; Emma Saddleton, Honorary Postgraduate Researcher. The project is supervised by Dr. Sophie Browning, Dr. Amy Hardy and Dr. Suzanne Jolley, who are all Clinical Psychologists in the South London & Maudsley NHS Foundation Trust, and at the Institute of Psychiatry, King's College, London.

Part 1

What is the purpose of the project? We want to find out how things change for teenagers while they are in hospital. We also want to find out more about the kind of unusual and / or difficult experiences young people may have, how they handle them, and what extra help they might need to deal with them.

We have put together some questionnaires which ask about different experiences and what young people do to cope with them. We will ask all young people admitted to the ward to fill in the questionnaires and then ask them again when they are ready to leave the ward to see if this has changed in any way.

For all of the young people we speak to who have had unusual and difficult experiences, we will ask if they would like to take part in the second part of the study.

For this part, we will give the young person a pack of information about ways of understanding and coping with their experiences and some strategies to try out. We will ask them whether they found the pack helpful. Based on what young people tell us about their experiences, about the pack, and what helps them, we will develop the pack further and work with them, alongside their care team on the ward, to try to find the most helpful strategies that work best.

What do you mean by 'unusual experiences'? Lots of people have experiences which can seem unusual to others. For example, hearing voices that other people cannot hear, seeing, feeling or smelling things that other people cannot, or finding that things around them look somehow odd or different. These experiences are much more common than most people think and often do not cause any problems for the people experiencing them. They might even be enjoyable. However, sometimes these experiences can be upsetting or worrying to the person who has them, or can stop the person doing what they normally do. This in turn can interfere with school or work, friendships and family relationships.

What do you mean by 'difficult experiences'? Almost three quarters of young people have had at least one 'difficult experience'. 'Difficult experiences' may have been a one-off event like seeing someone close dying, being assaulted or being involved in a road traffic accident. It may also be something that carries on happening such as violence in the home, bullying, being involved in gang-related activities, being hurt or seeing somebody else being seriously hurt in any other way. These experiences may not have any lasting effects, but often, afterwards, people may feel like the event is happening again, or feel very easily upset and not know how to handle it, or feel afraid to go near any reminder of the event, or sometimes even to think about it. Sometimes unusual experiences can be related to these kinds of events.

Why has my child been asked to take part? We are asking all young people who have been admitted to the ward to complete some questionnaires which ask about unusual and difficult experiences and how they cope with them. For the second part

of the study we will ask the young people who reported unusual or difficult experiences whether they would like to try out the pack and then tell us what they thought about it, how relevant it was for their experiences, and how we could improve it.

What will my child be asked to do?

Stage 1: If your child would like to take part in the study, you will first need to sign the form at the end of this sheet, to say that you are happy for them to go ahead. In the first stage of the study, your child will complete the some questionnaires. These will take about an hour to complete and one of the researchers will be there to help them if they request this.

Stage 2: In the second stage of the study, young people will be offered the information pack, and asked if they would like to just give some feedback on the pack, or to work through the pack with one of the researchers. This will take place on the ward over up to 6 meetings of up to 45 minutes. Based on what these young people tell us about their experiences, the pack, and what is helpful, we will develop the pack further.

Your child will be asked to complete some of the questionnaires again when they are ready to leave hospital. This is to find out if there have been any positive changes from your child being on the ward. If your child looked at the pack then they will be asked again how they found it and any changes they would suggest for the future.

Your child will be given a £5 gift voucher as a thank-you for taking part in the project.

Will my and my child's taking part in the study be kept confidential? We work closely with your child's clinical team and the information your child gives us will usually be shared with the clinical team as it may help them to provide care for your child. The researcher will note this down on the team's notes system, where they will also note that your child is taking part in the study and when they meet with them. If you or child tell us anything about someone being hurt or not safe, we will have to tell other people who are there to help with these kinds of situations. More details are included in Part 2.

How will the information we give you be kept? All the answers your child gives to the questionnaires and activities will be kept on paper and as an electronic file. Your child's name will be kept separately, with the number, on paper, so that we can identify their questionnaires in the future if we need to (for example, if you decide you no longer want them to be part of the study). We will only identify your child's questionnaires for a reason like this. Your child's details will be kept for up to 12 years, and then will be confidentially destroyed. We will keep a completely anonymous copy of the electronic file indefinitely, from which your child will not be able to be identified at all. At the very end of the study, once we have seen a number of children, you and your child will be able to have a summary of the results, if you would like.

Is there any risk from taking part? We do not think that this study will be harmful in any way. We want it to be helpful and the questionnaires and the pack have all been designed for children and have been approved by researchers who have many years experience of working with children. However if your child is distressed in any way by taking part, the therapists working on the study are qualified to deal with this sensitively and appropriately. If this happens, please talk to the researcher, or to one of the therapists or staff on the ward.

Are there any benefits of taking part? We hope to find out more about how difficult and unusual experiences are related and how young people cope with them so we can help young people to develop positive coping strategies. Children also sometimes find completing the questionnaires interesting and helpful.

Do I have to take part?

It is up to you and your child to decide whether or not to take part in this study. If your child does decide to take part they are still free to stop at any time and without giving any reasons. This will not affect any other help or support that your child will be offered.

What happens when the project stops?

We will ask you and your child if you would be willing to be contacted regarding future projects, and if you would, we will keep your name and contact details. You will be able to ask us not to contact you at any time, and this will not affect you in any other way.

This completes Part 1 of the Information Sheet.

If the information in Part 1 has interested you and you are thinking about taking part, please continue to read the additional information in Part 2 before making any decision.

Part 2: What if there is a problem?

What if relevant new information becomes available? Sometimes we get new information during a project. If we find out anything new about any of the questionnaires or the information pack which means it might be harmful or upsetting for you or your child in any way, we will tell you both at once and you can decide whether or not you want to carry on.

What will happen if my child no longer wants to carry on with the study? If your child decides they no longer want to take part, you or they should let us know at once. A member of the research team will talk to your child about which parts they no longer want to be involved in (for example, they might not want to go through the pack, but feel OK with the questionnaires). We would like to still keep the information they have already given us if this is possible, but we will check this with you both as well. You can tell us that you would like us not to keep any information at all about your child, and in this case we will destroy all our copies of the information they have given us. This will not affect any other care your child might be offered, or your rights in any other way. The only exception to this will be information that is important for your child's care, or that relates to any risk of somebody being hurt or unsafe. We will sometimes have to hand this information over to the clinical team, and will be unable to destroy it because of its importance.

Complaints: If you have a concern about any aspect of this study, you should ask to speak with the researchers who will do their best to answer your questions, or to the staff on the ward. If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints Procedure – Contact Patient Advice and Liaison Service (PALS) on: 0800 731 2864 or pals@slam.nhs.uk.

Harm: In the event that something does go wrong and your child is harmed during the research study there are no special compensation arrangements. If your child is harmed and this is due to someone's negligence then you may have grounds for a legal action for compensation against your local NHS Trust but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you (if appropriate).

Will my child's taking part in this study be kept confidential? All information which is collected about your child during the course of the research will be kept strictly confidential. All their answers to the questionnaires will be kept on paper and on an electronic database. They will be kept securely and anonymously and will be identifiable only by a number, not by name. Your child's name will be kept separately, with the number, on a different database and on paper, so that we can identify their questionnaires and recordings in the future if we need to (for example, if they decide they no longer want to be part of the study). We will only identify your child's questionnaires for a reason like this. Paper copies of questionnaires will be kept securely by the researchers in a locked filing cabinet in a locked office. Your child's details will be kept for up to 12 years, and then will be confidentially destroyed. We will keep a completely anonymised copy of the database indefinitely, from which you and your child will not be able to be identified at all.

The information your child gives will usually be available only to the research team and to the clinical team. We work closely with your child's clinical team and the information your child gives us will usually be shared with the clinical team as it may help them to provide care for your child. The researcher will note this down on the team's notes system, where they will also note that your child is taking part in the study and when they meet with them. In addition, should you or your child give any information, such as criminal disclosures, or information relating to your own, your child's or others' safety, which requires action, we are legally obliged to act on this information, and to pass this information on to others, including services who are able to deal with these concerns, which may include Social Services or the Police.

What will happen to the results of the research study? We intend to publish the results of the research. Your child will not be personally identified in any report/publication. We sometimes use quotes from participants when we write about the research. In this case we will tell you what we want to write and where it will be seen and check that you agree.

Who is organising and funding the research? The research is organised by the team, who are members of academic and clinical staff at the Institute of Psychiatry, King's College London and the South London & Maudsley NHS Foundation Trust.

Who has reviewed the study? The study has been reviewed by the Brent Research Ethics Committee, reference number 12/LO/1984 and by the Joint Institute of Psychiatry/South London & Maudsley NHS Foundation Trust Research & Development Office (ref: to be inserted).

How can I take part? If you would like to take part in this project, please complete the attached consent form. If you have any questions or concerns about taking part in this study please contact the researchers below.

Contact Details: Anca Alba and Rosanna Philpott – 0207 848 0223/4

Appendix B2: Information Sheet for Young People

**Institute of
Psychiatry**

at The Maudsley

South London and Maudsley NHS Foundation Trust



ISIS

Inpatient Stay Improvement Study

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KING'S
College
LONDON

Information Sheet for Young People

V3 2nd April 2013

ISIS Study: Inpatient Stay Improvement Study

- ★ **What is this about?** We are asking if you want to be part of a project to find out how things change for teenagers while they are in hospital, and especially about unusual or difficult experiences that teenagers may have and how they cope with them.
- ★ **Who are you? What do you do?** We work with children, teenagers and adults who are feeling upset or having problems and talk to them to find out what is upsetting them, then we help them find new ways to handle it.
- ★ **What are 'unusual experiences'?** Lots of children, teenagers and adults have these, and often they are not upsetting at all, but sometimes they can be. They are things like:
 - ☞ *Hearing or seeing things that other people can't*
 - ☞ *Feeling like something weird is going on that other people don't understand*
 - ☞ *Feeling like you are being watched or followed*
- ★ **What are 'difficult experiences'?** Lots of children, teenagers and adults have these and they are often very upsetting. They are things like:
 - ☞ *Being hurt or mistreated*
 - ☞ *Being in an accident*
 - ☞ *Being bullied*

The Inpatient Stay Improvement Study (ISIS) has ethical approval from the London Brent Research Ethics Committee (Ref. 12/LO/1984). Researchers are Anca Alba, Rosanna Philpott and Jonathan Bradley, Clinical Psychologists in Training; Emma Saddleton, Honorary Postgraduate Researcher. The project is supervised by Dr. Sophie Browning, Dr. Amy Hardy and Dr. Suzanne Jolley, who are all Clinical Psychologists in the South London & Maudsley NHS Foundation Trust, and at the Institute of Psychiatry, King's College, London.

- ★ **Why are you asking me?** We are asking all young people who come to stay on the ward to take part in this project.
- ★ **What if I say yes?** First, we will ask you some questions. This is to find out more about what kinds of problems you are having and how you are managing them.
- ★ **What happens next?** For most young people we will just ask you to answer some of the questions again when you are ready to leave hospital to see if anything has changed following your stay on the ward. If you say in the questionnaires that you have unusual and difficult experiences, we will ask you if you want to talk more about these and try out some strategies to deal with these experiences.
- ★ **What if I say yes?** You will meet with someone who will talk to you about what has been happening and ways to help. You will have up to 6 meetings on the ward with one of the researchers.
- ★ **Can I say no?** Yes, you can. It is up to you whether you join in. If you don't want to that is fine – no-one will mind and it won't change anything on the ward. Even if you say yes, you can still change your mind whenever you want and you don't need to tell us why.
- ★ **Who will know about this?** We usually tell the staff who are looking after you on the ward what you have told us. Apart from this, the things you tell us are private, but the ward staff will tell other people who are there to help if they are worried about whether you or someone else is safe. This could include your family or carers, social services or the Police. Your care team will decide with you who to involve and how to try to make sure you and they are safe.
- ★ **Can I find out more?** Yes. Ask your parents or carer. We have given them a longer sheet like this one that you can read if you want. If they agree, we can tell you more about joining in on the phone, or we can meet you to tell you more. You can meet us on your own or with your family – it is up to you and your parent or carer.

😊 **Thanks for reading the sheet** 😊

Appendix C1: Consent Form Parents

**Institute of
Psychiatry**

at The Maudsley

South London and Maudsley NHS Foundation Trust



ISIS Inpatient Stay Improvement Study

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KING'S
College
LONDON

CONSENT FORM – V3 2nd April 2013
ISIS Study: Inpatient Stay Improvement Study
Names of researchers: Anca Alba, Rosanna Philpott, Emma Saddleton

Please initial boxes:

1. I have read the information sheet dated 02/04/13 for the above project, and one of the researchers has talked to me about it. I have had enough time to think about it and ask questions. ☐
2. I understand that taking part is voluntary and that my child and I are free to withdraw at any time, without giving any reason, and without our medical care or legal rights being affected. ☐
3. I understand that the research team work closely with my child's care team on the ward, will let them know that my child is taking part in the study. ☐
4. I am willing for the researchers to share with the ward team all information relevant to my child's care, that becomes apparent while we are taking part in the study. ☐
5. I am willing for the researchers to record this information in the team's electronic notes for my child. ☐
6. I give permission for sections of my child's medical notes to be looked at by the researchers, if it is relevant to taking part in this research (for example, to get an address, age or confirm clinical information). ☐
7. I understand that information relating to my child taking part in this study will be stored in an electronic file for up to 12 years. ☐
8. I agree for my child to take part in the above study. ☐

Name of parent/carer	Date	Signature

9. I have explained the study to this participant and answered their questions honestly and fully. ☐

Name of researcher	Date	Signature

I would like to be sent a summary of the results when completed ☐

I would like to be sent details of other studies in the future ☐

When completed, 1 copy for the family, 1 for researcher; 1 (original) to be kept in medical notes

The Inpatient Stay Improvement Study (ISIS) has ethical approval from the London Brent Research Ethics Committee (Ref. 12/LO/1984). Researchers are Anca Alba, Rosanna Philpott and Jonathan Bradley, Clinical Psychologists in Training; Emma Saddleton, Honorary Postgraduate Researcher. The project is supervised by Dr. Sophie Browning, Dr. Amy Hardy and Dr. Suzanne Jolley, who are all Clinical Psychologists in the South London & Maudsley NHS Foundation Trust, and at the Institute of Psychiatry, King's College, London.

Appendix C2: Assent form for Young People

**Institute of
Psychiatry**

at The Maudsley

South London and Maudsley NHS Foundation Trust



ISIS

Inpatient Stay Improvement Study

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KING'S
College
LONDON

ASSENT FORM for Young People – V3 2nd April 2013

ISIS Study: Inpatient Stay Improvement Study

Names of researchers: Anca Alba, Rosanna Philpott, Emma Saddleton

Thank you for thinking about taking part in this project. The project must be explained to you before you agree to take part. If you have any questions please ask before you decide whether to join in. You will be given a copy of this form to keep.

Please tick the boxes, if you agree and the answer is 'yes':

1. I have read the Information Sheet for Young People, dated 2nd April, 2013, and someone has explained it to me and answered my questions. ☐
2. I know that I can change my mind about joining in any time and I don't have to say why. ☐
3. I know that the researchers work with my care team and will let them know what I say. I know that they might need to tell other people who are there to help if it is about somebody being hurt. ☐
4. I want to join in with the project. ☐

If any answers are 'no' or you don't want to join in, don't write your name.
If you do want to join in, write your name on the line.

Young person's name: _____ Date: _____

5. I have explained the study and answered any questions. ☐

Name of researcher	Date	Signature
--------------------	------	-----------

When completed, 1 copy for the family, 1 for researcher; 1 (original) to be kept in medical notes

The Inpatient Stay Improvement Study (ISIS) has ethical approval from the London Brent Research Ethics Committee (Ref. 12/LO/1984). Researchers are Anca Alba, Rosanna Philpott and Jonathan Bradley, Clinical Psychologists in Training; Emma Saddleton, Honorary Postgraduate Researcher. The project is supervised by Dr. Sophie Browning, Dr. Amy Hardy and Dr. Suzanne Jolley, who are all Clinical Psychologists in the South London & Maudsley NHS Foundation Trust, and at the Institute of Psychiatry, King's College, London.

Appendix D: Questionnaires

Participant ID:

Date of Questionnaire Completion:

DoB:

Assessment Stage:

Gender:

Name of Researcher (Initials only):

'Unusual Experiences' 1

Circle the answers that apply to you.

1. Some people believe that their thoughts can be read. Have other people ever read your thoughts? If true:	Not true	Somewhat true	Certainly true
How often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times
How much has it upset you?	Not at all	Only a little	Quite a lot
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot
2. Have you ever believed that you were being sent special messages through the television? If true:	Not true	Somewhat true	Certainly true
How often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times
How much has it upset you?	Not at all	Only a little	Quite a lot
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot
3. Have you ever thought that you were being followed or spied upon? If true:	Not true	Somewhat true	Certainly true
How often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times
How much has it upset you?	Not at all	Only a little	Quite a lot
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot
4. Have you ever heard voices that other people could not hear? If true:	Not true	Somewhat true	Certainly true
How often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times
How much has it upset you?	Not at all	Only a little	Quite a lot
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot
5. Have you ever felt that you were under the control of some special power? If true:	Not true	Somewhat true	Certainly true
How often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times
How much has it upset you?	Not at all	Only a little	Quite a lot
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot

UNUSUAL EXPERIENCES IES

Participant ID:
DoB:
Gender:

Date of Questionnaire Completion:
Assessment Stage:
Name of Researcher (Initials only):

6. Have you ever known what another person was thinking even though that person wasn't speaking? If true:	Not true		Somewhat true		Certainly true	
How often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times		
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal		
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal		
7. Have you ever felt as though your body had been changed in some way that you could not understand? If true:	Not true		Somewhat true		Certainly true	
How often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times		
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal		
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal		
8. Do you have any special powers that other people don't have? If true:	Not true		Somewhat true		Certainly true	
How often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times		
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal		
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal		
9. Have you ever seen something or someone that other people could not see? If true:	Not true		Somewhat true		Certainly true	
How often has it happened over the last 2 weeks?	Not at all	Only once	2-4 times	5 or more times		
How much has it upset you?	Not at all	Only a little	Quite a lot	A great deal		
How much has it made things hard at home or school?	Not at all	Only a little	Quite a lot	A great deal		
10. If you have not had any of these experiences in the last 2 weeks, have you had any of them in the last year?	Not true		Somewhat true		Certainly true	

UNUSUAL EXPERIENCES IES



Participant ID:
DoB:
Gender:

Date of Questionnaire Completion:
Assessment Stage:
Name of Researcher (Initials only):

'Unusual Experiences' 2

From the different thoughts and beliefs we have talked about, which would you consider to be the main one?

- ☐ Believing that your thoughts can be read.
- ☐ Believing that you are being sent special messages through the television.
- ☐ Thoughts of being followed or spied upon.
- ☐ Hearing voices that other people cannot hear.
- ☐ Feeling that you are under the control of some special power.
- ☐ Knowing what another person is thinking even though that person isn't speaking.
- ☐ Feeling as though your body has been changed in some way that you cannot understand.
- ☐ Having special powers that other people don't have.
- ☐ Seeing something or someone that other people cannot see

Participant ID:
DoB:
Gender:

Date of Questionnaire Completion:
Assessment Stage:
Name of Researcher (Initials only):

Difficult Experiences 1

1. Questions about any difficult experiences you may have had.

a) Below is a list of difficult experiences that may have happened to you. For each one, please could you say whether or not it happened, and if it happened only once or more than once.

Type of Trauma	No	Happened only once	Happened more than once
Illness or being very poorly or sick			
Being in a serious accident			
Being in a natural disaster like an earthquake or tidal wave			
Other people hurting me in some way physically			
Other people hurting me in some way sexually			
Other people hurting me in some way emotionally			
Seeing somebody else seriously hurt or killed			
Being bullied			
Contact with mental health services that was scary or threatening (like coming into hospital, reactions of family, friends or staff)			
Other problems or experiences that led to you coming into hospital that were scary or threatening (like hearing voices, seeing unusual things, thinking someone or something was out to harm you).			

b) Is there anything else that you would like me to pass on to your care team about any difficult experiences that have happened to you?
REMEMBER, you don't have to tell us anything else – only say if you want to, although people often find it helpful to talk about what has happened. Whatever you tell us, we will pass it on to one of the staff on the ward who is working with you so that they can help you.

c) Please place a star beside the difficult experience that is **currently** most upsetting for you.

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Participant ID:
DoB:
Gender:

Date of Questionnaire Completion:
Assessment Stage:
Name of Researcher (Initials only):

2. Questions about the **currently** most upsetting experience.

a) How old were you when it started? Age in years and months:

b) If it has ended, how old were you when it stopped? Age in years and months:

c) When it was happening, were you seriously injured, or did you think you might die or be very seriously hurt? YES / NO

d) When it was happening, was someone else seriously injured, or killed, or did you think that someone else might die or be very seriously hurt? YES / NO

e) As it was happening, did you feel very scared, helpless or horrified? YES / NO

f) I'm going to read a list of thoughts and feelings that some young people have **during** difficult experiences. For each sentence, choose the answer that best matches your feelings **during the event**.

“During the event...”		NOT AT ALL	A LITTLE LIKE THAT	LIKE THAT	VERY MUCH LIKE THAT
1.	Being so shocked that I didn't feel anything	[]	[]	[]	[]
2.	Not really noticing what was going on around me (like being in a bubble)	[]	[]	[]	[]
3.	Feeling like I was in a dream	[]	[]	[]	[]
4.	Feeling like I was outside my body, or that my body didn't belong to me	[]	[]	[]	[]

****START HERE FOR DISCHARGE ASSESSMENT IF NO NEW MAIN EVENT****

g) We are now going to ask you some questions about your reactions **since** the difficult experience that is **currently** most upsetting to you.

I'm going to read a list of thoughts and feelings that some young people have **after** difficult experiences.

For each sentence, choose the answer that best matches your feelings **during the past week**.

“Since the event....”		Not at all or only one time	Once a week or less/once in a while	2 to 4 times a week/half the time	5 or more times a week/ almost always
1.	Being so shocked that I didn't feel anything	[]	[]	[]	[]
2.	Not really noticing what was going on around me (like being in a bubble)	[]	[]	[]	[]
3.	Feeling like I was in a dream	[]	[]	[]	[]
4.	Feeling like I was outside my body, or that my body didn't belong to me	[]	[]	[]	[]

Meiser-Stedman scales

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Participant ID: _____ Date of Questionnaire Completion: _____
 DoB: _____ Assessment Stage: _____
 Gender: _____ Name of Researcher (Initials only): _____

Difficult Experiences 2

Below is a list of questions about reactions people have after difficult experiences. *Thinking about your currently most distressing difficult experience*, please tick each item showing how frequently these comments were true for you *during the past seven days*.

If they did not occur during that time please tick the 'not at all' box.

		Not at all	Rarely	Sometimes	Often
1.	Do you think about it even when you don't mean to?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Do you try to remove it from your memory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Do you have difficulties paying attention or concentrating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Do you have waves of strong feelings about it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Do you startle more easily or feel more nervous than you did before it happened?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Do you stay away from reminders of it (e.g. places or situations)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Do you try not talk about it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Do pictures about it pop into your mind?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Do other things keep making you think about it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Do you try not to think about it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Do you get easily irritable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Are you alert and watchful even when there is no obvious need to be?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	Do you have sleep problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Participant ID: _____ Date of Questionnaire Completion: _____
 DoB: _____ Assessment Stage: _____
 Gender: _____ Name of Researcher (Initials only): _____

Difficult Experiences 3

How I've been thinking and feeling since the frightening event

We would like to know what kinds of thoughts and feelings you've been having since the upsetting experience happened to you. Below is a list of statements. Please read each statement carefully and tell us how much you AGREE or DISAGREE with each statement by ticking **one** box. People react to difficult experiences in many different ways. There are no right or wrong answers to these statements.

	Question	Don't agree at all	Don't agree a bit	Agree a bit	Agree a lot
1.	Anyone could hurt me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Everyone lets me down.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	I am a coward.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	My reactions since the frightening event mean I have changed for the worse.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	I don't trust people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	My reactions since the frightening event mean something is seriously wrong with me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	I am no good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Not being able to get over all my fears means that I am a failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Small things upset me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	I can't cope when things get tough.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	I can't stop bad things from happening to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	I have to watch out for danger all the time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	My reactions since the frightening event mean I will never get over it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	I used to be a happy person but now I am always sad.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	Bad things always happen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	I will never be able to have normal feelings again.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	I'm scared that I'll get so angry that I'll break something or hurt someone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	Life is not fair.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	My life has been destroyed by the frightening event.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Participant ID:
DoB:
Gender:

Date of Questionnaire Completion:
Assessment Stage:
Name of Researcher (Initials only):

	Question	Don't agree at all	Don't agree a bit	Agree a bit	Agree a lot
20.	I feel like I am a different person since the frightening event.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.	My reactions since the frightening event show that I must be going crazy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.	Nothing good can happen to me anymore.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.	Something terrible will happen if I do not try to control my thoughts about the frightening event.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.	The frightening event has changed me forever.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.	I have to be really careful because something bad could happen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Difficult Experiences 4

People can have different ideas about why difficult experiences happen. Why do you think your most upsetting difficult experience happened?

	Question	Don't agree at all	Don't agree a bit	Agree a bit	Agree a lot
1.	I blame myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	I blame other people - and they meant to harm me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	I blame other people - but they didn't mean to harm me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	I don't blame anyone, it wasn't anybody's fault, they just happened	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Event appraisals



Appendix E: Shapiro Wilks Test of Normality

Assessment Measure	Shapiro-Wilk		
	Statistic	df	Significance
CGAS	.955	46	.073
PLE severity	.893	46	.001
Trauma frequency	.952	43	.072
Peri-traumatic dissociation	.912	42	.003
Post-traumatic dissociation	.879	42	.000
CPTCI total score	.868	41	.000
CR-IES 13 total score	.934	42	.017

Appendix F: Demographic v test variable correlations

Gender v number of traumas experienced

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The distribution of No of traumas is the same across categories of 1 - Female; 2 - Male.	Independent-Samples Mann-Whitney U Test	.820	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Gender v PLE total severity score, total trauma frequency, victimisation trauma frequency, non-victimisation trauma frequency

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PLE Total Admission is the same across categories of 1 - Female; 2 - Male.	Independent-Samples Mann-Whitney U Test	.385	Retain the null hypothesis.
2	The distribution of Trauma_Total is the same across categories of 1 - Female; 2 - Male.	Independent-Samples Mann-Whitney U Test	.110	Retain the null hypothesis.
3	The distribution of Vic_Total is the same across categories of 1 - Female; 2 - Male.	Independent-Samples Mann-Whitney U Test	.201	Retain the null hypothesis.
4	The distribution of Non_Vic_Total is the same across categories of 1 - Female; 2 - Male.	Independent-Samples Mann-Whitney U Test	.100	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Ethnicity v number of traumas experienced

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The distribution of No of traumas is the same across categories of Ethnicity.	Independent-Samples Mann-Whitney U Test	.404	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Ethnicity v PLE total severity score, total trauma frequency, victimisation trauma frequency, non-victimisation trauma frequency

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PLE Total Admission is the same across categories of Ethnicity.	Independent-Samples Mann-Whitney U Test	.581	Retain the null hypothesis.
2	The distribution of Trauma_Total is the same across categories of Ethnicity.	Independent-Samples Mann-Whitney U Test	.394	Retain the null hypothesis.
3	The distribution of Vic_Total is the same across categories of Ethnicity.	Independent-Samples Mann-Whitney U Test	.117 ¹	Retain the null hypothesis.
4	The distribution of Non_Vic_Total is the same across categories of Ethnicity.	Independent-Samples Mann-Whitney U Test	.263 ¹	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

¹Exact significance is displayed for this test.

Age v PLE total severity score, total trauma frequency, victimisation trauma frequency, non-victimisation trauma frequency **Correlations**

			Participant Age At First Assessment (Completed years)	PLE Total Admission	No of traumas	Trauma_Total	Vic_Total	Non_Vic_Total
Spearman's rho	Participant Age At First Assessment (Completed years)	Correlation Coefficient	1.000	-.072	.231	.122	.118	.200
		Sig. (1-tailed)	.	.316	.061	.218	.228	.102
		N	46	46	46	43	42	42
	PLE Total Admission	Correlation Coefficient	-.072	1.000	.159	.572**	.483**	.494**
		Sig. (1-tailed)	.316	.	.146	.000	.001	.000
		N	46	46	46	43	42	42
	No of traumas	Correlation Coefficient	.231	.159	1.000	.628**	.524**	.510**
		Sig. (1-tailed)	.061	.146	.	.000	.000	.000
		N	46	46	46	43	42	42
	Trauma_Total	Correlation Coefficient	.122	.572**	.628**	1.000	.886**	.856**
		Sig. (1-tailed)	.218	.000	.000	.	.000	.000
		N	43	43	43	43	42	42
	Vic_Total	Correlation Coefficient	.118	.483**	.524**	.886**	1.000	.538**
		Sig. (1-tailed)	.228	.001	.000	.000	.	.000
		N	42	42	42	42	42	42
	Non_Vic_Total	Correlation Coefficient	.200	.494**	.510**	.856**	.538**	1.000
		Sig. (1-tailed)	.102	.000	.000	.000	.000	.
		N	42	42	42	42	42	42

**. Correlation is significant at the 0.01 level (1-tailed).

Appendix G: PLE type v trauma type correlations (N=42)

Psychotic-Like Experience	Trauma	Correlation
1: Some people believe that their thoughts can be read. Have other people ever read your thoughts?	Seeing someone else hurt or killed	$r=0.42, n=42, p<0.01$
2: Have you ever believed that you were being sent special messages through the television?	Being in a natural disaster	$r=0.31, n=42, p<0.05$
	Being hurt physically	$r=0.40, n=42, p<0.01$
	Being hurt emotionally	$r=0.49, n=42, p<0.01$
	Seeing someone else hurt or killed	$r=0.37, n=42, p<0.05$
	Other scary experiences	$r=0.35, n=42, p<0.05$
3: Have you ever thought that you were being followed or spied upon?	Being hurt physically	$r=0.43, n=42, p<0.01$
	Being hurt sexually	$r=0.41, n=42, p<0.01$
	Seeing someone else hurt or killed	$r=0.51, n=42, p<0.01$
	Contact with MH services	$r=0.43, n=42, p<0.05$
	Other scary experiences	$r=0.56, n=42, p<0.01$
4: Have you ever heard voices that other people could not hear?	Being hurt physically	$r=0.34, n=42, p<0.05$
	Seeing someone else hurt or killed	$r=0.32, n=42, p<0.05$
	Contact with mental health services	$r=0.52, n=42, p<0.01$
	Other scary experiences	$r=0.54, n=42, p<0.01$
5: Have you ever felt that you were under the control of some special power?	Being hurt physically	$r=0.35, n=42, p<0.05$
	Being hurt sexually	$r=0.38, n=42, p<0.05$
	Being hurt emotionally	$r=0.34, n=42, p<0.05$
	Contact with mental health services	$r=0.32, n=42, p<0.05$

6: Have you ever known what another person was thinking even though that person wasn't speaking?	Seeing someone else hurt or killed	$r=0.38, n=42, p<0.05$
7: Have you ever felt as though your body had been changed in some way that you could not understand?	Being in a natural disaster	$r=0.32, n=42, p<0.05$
8: Do you have any special powers that other people don't have?	Being in a natural disaster	$r=0.39, n=42, p<0.05$
	Being hurt sexually	$r=0.42, n=42, p<0.01$
9: Have you ever seen something or someone that other people could not see?	Being hurt physically	$r=0.37, n=42, p<0.05$
	Being hurt sexually	$r=0.40, n=42, p<0.01$
	Seeing someone else hurt or killed	$r=0.53, n=42, p<0.01$
	Contact with MH services	$r=0.32, n=42, p<0.05$
	Other scary experiences	$r=0.49, n=42, p<0.01$